

NAVAL POSTGRADUATE SCHOOL

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THESIS

**MULTIYEAR PROCUREMENT: AN ANALYSIS OF THE
RELATIONSHIP BETWEEN CONGRESS AND THE
DEPARTMENT OF DEFENSE IN AN ACQUISITION
REFORM ENVIRONMENT**

by

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December 1998

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ACQUISITION REFORM ENVIRONMENT**

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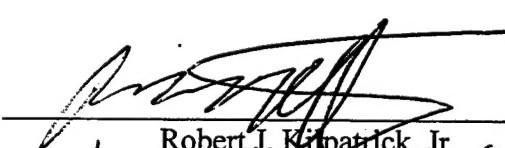
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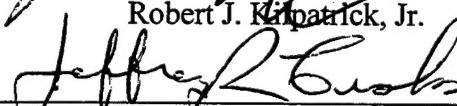
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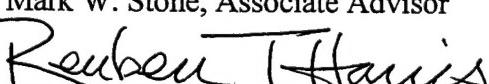
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TABLE OF CONTENTS

| | | |
|------|---|----|
| I. | INTRODUCTION..... | 1 |
| | A. GENERAL..... | 1 |
| | B. OBJECTIVE OF STUDY..... | 2 |
| | C. SCOPE..... | 3 |
| | D. RESEARCH QUESTIONS..... | 3 |
| | E. METHODOLOGY..... | 4 |
| | F. ASSUMPTIONS AND LIMITATIONS..... | 5 |
| | G. DEFINITIONS AND TERMS..... | 6 |
| | H. THESIS ORGANIZATION..... | 7 |
| II. | BACKGROUND..... | 9 |
| | A. GOVERNMENT REFORM..... | 9 |
| | B. ACQUISITION REFORM..... | 10 |
| | C. MULTIYEAR PROCUREMENT LEGISLATION AND REGULATION..... | 14 |
| | D. MULTIYEAR PROCUREMENT APPROVAL PROCESS..... | 17 |
| | E. CONGRESSIONAL OVERSIGHT..... | 19 |
| | F. SUMMARY..... | 20 |
| III. | METHODOLOGY AND DATA PRESENTATION..... | 21 |
| | A. METHODOLOGY FOR ATTAINING DATA..... | 21 |
| | B. MULTIYEAR PROCUREMENT APPROVAL/DISAPPROVAL RECORD..... | 21 |
| | C. GENERAL ACCOUNTING OFFICE REPORTS..... | 22 |

| | |
|--|-----|
| IV. DATA ANALYSIS AND INTERPRETATION..... | 41 |
| A. INTRODUCTION..... | 41 |
| B. PRIMARY CAUSES FOR MYP APPROVAL/DISAPPROVAL..... | 41 |
| C. MULTIYEAR PROCUREMENT CANCELLATION RISK..... | 50 |
| D. MULTIYEAR PROCUREMENT LEGISLATION IN AN ACQUISITION REFROM ENVIRONMENT..... | 52 |
| E. APPROPRIATE AMOUNT OF CONGRESSIONAL CONTROL..... | 59 |
| F. RECENT EXPERIENCE WITH MYP DISAPPROVAL..... | 64 |
| G. SUMMARY..... | 72 |
| V. CONCLUSIONS AND RECOMMENDATIONS..... | 75 |
| A. INTRODUCTION..... | 75 |
| B. CONCLUSIÖNS..... | 75 |
| C. RECOMMENDATIONS..... | 79 |
| D. ANSWERS TO RESEARCH QUESTIONS..... | 80 |
| E. AREAS OF FURTHER RESEARCH..... | 85 |
| APPENDIX A. ACRONYMS..... | 87 |
| APPENDIX B. EXHIBIT MYP-1, MULTIYEAR PROCUREMENT CRITERIA..... | 89 |
| APPENDIX C. EXHIBIT MYP-2, TOTAL PROGRAM FUNDING PLAN..... | 93 |
| APPENDIX D. EXHIBIT MYP-3, CONTRACTING FUNDING PLAN..... | 95 |
| APPENDIX E. EXHIBIT MYP-4, PRESENT VALUE ANALYSIS..... | 97 |
| LIST OF REFERENCES..... | 99 |
| INITIAL DISTRIBUTION LIST..... | 107 |

I. INTRODUCTION

A. GENERAL

The 1990s fiscal environment of the DOD can be characterized by the phrase "doing more with less". Decreasing real funding levels combined with consistently high operational commitments has lead DOD, and much of the rest of Government, to seek innovative methods to achieve high level performance with decreasing resources. This is the basis for acquisition reform. Increased use of multiyear procurement (MYP) is often offered as a method to accomplish this goal and increase the efficiency of Government procurement.

There are several tradeoffs that must be evaluated when considering MYP. Proponent highlights include program stability and reduced administrative burden. Both of these factors lead to increased efficiency and thus reduced costs for both the contractor and the Government. There are also risks associated with multiyear requirements. If the Government decides it wants to cancel a program, potential cancellation charges can be quite expensive. Secondly, MYPs reduce the amount of flexibility of all players in the budget process from Congress and the President down to the individual component services. This is especially important in an environment of shrinking budgets. If a budget is decreased, and some programs are in multiyear contracts, it is cost prohibitive to modify or cancel that program. Acquisition officials face great pressures not to cancel existing MYPs due to potential payment of cancellation fees, even though cancellation or reduction may make the most sense due to changing threats and requirements. Therefore, budgeting flexibility may be decreased. Thus, tradeoffs must be made between the advantages of stability and efficiency, versus the disadvantages of lost flexibility and cancellation charge risk. These tradeoffs are well documented in prior research.

Congress has an interesting relationship with the DOD. On one hand, Congress passes legislation that directs the basic operations of the military. From this perspective, Congress strives to make the military as effective and efficient as possible. Congress has the responsibility to control and protect the public funds and ensure they are spent properly. On the other hand, individual Congressmen have the responsibility to look out for the interests of their own districts. This often includes steering DOD programs and their associated jobs and money into their districts. Additionally, Congressmen must also seek reelection every two years in the House of Representatives and every six years in the Senate. If they allow too many MYPs to be approved, they will lose some of the ability to bring jobs to their districts on an annual basis. This will make it harder for Congressmen to demonstrate to their voters that they are doing good things for them and that they are deserving of their vote. The conflicting dynamics that Congress faces may have an impact on MYP policy and subsequent approval decisions.

The public's call for acquisition reform within our Government is one that permeates our society. Pressure exists throughout Government to take on the basic premises of acquisition reform. Streamlining, improving efficiency, increased insight, decreased oversight and empowering decision makers with the authority to use their judgment to make smart decisions are only a few of the basic themes of acquisition reform.

B. OBJECTIVE OF STUDY

The object of this research is to examine the relationship between Congress and DOD with respect to MYP within the 1990s environment of decreasing DOD budgets. This environment has spurred increased focus on acquisition reform. This thesis analyzes the historical record and determines whether MYP programs have functioned in compliance with

Congress' directives. It concludes by exploring opportunities for additional acquisition reform initiatives for MYP.

C. SCOPE

This research focuses on the DOD MYP approval process. It analyzes the historical record of DOD MYP requests, and the Congressional approval/disapproval results for those requests. The MYP process is analyzed to determine if it has evolved consistently with acquisition reform directives and trends of the 1990s. This thesis does not analyze political motives or financial issues associated with MYP such as full funding, composition of cancellation ceilings and funded termination liabilities.

D. RESEARCH QUESTIONS

The primary research question is, "What role does Congress play with respect to DOD MYP policy and has MYP approval criteria changed as a result of recent acquisition reform initiatives?"

Subsidiary Questions to this topic are:

1. What are the current policies and regulations pertaining to MYP?
2. What has been DOD's experience with Congress' MYP approval process?
3. What are the primary Congressional considerations leading to MYP approval/rejection decisions?
4. Has Congress adhered to its stated MYP approval/rejection criteria?
5. What is the DOD's experience with MYP program cancellations?
6. What is the relationship between the rationale Congress has given for rejection of MYPs and their stated approval/rejection criteria?

7. Has Congress altered MYP policies as a result of recent acquisition reform initiatives?
8. Is the amount of Congressional control over the DOD's MYP process appropriate?
9. How might MYP policy be changed to improve the acquisition process?

E. METHODOLOGY

First, a literature review was conducted to determine MYP background and definition of current Federal laws and regulations. Data were gathered through various Government homepages on the internet, LEXIS/NEXIS, Government and literary publications, existing Naval Postgraduate School thesis work, and legislative historical documents.

Second, research were conducted to find Congressional approval/rejection results of DOD MYP requests. This data was attained from Annual Presidential Budget Requests, DOD Budget Procurement Programs (P-1), Office of the Under Secretary of Defense (OUSD) papers, and DOD Appropriation and Authorization Acts.

Third, data were gathered to determine Congressional, DOD and third party perspectives on the primary and subsidiary questions. On-site visits were performed at the OUSD, Acquisition and Technology and OUSD Comptroller. A second on-site visit was conducted at the Senate Armed Services Committee (SASC) professional staff at the Russell building in Washington D.C. During these site visits, key personnel in the MYP process were interviewed and additional data were gathered. United States General Accounting Office reports were utilized to provide an objective analysis of specific MYP candidates.

Finally, these data are analyzed to answer the above research questions and to facilitate recommendations and conclusions.

F. ASSUMPTIONS AND LIMITATIONS

After Congress approves a DOD MYP request, it is enacted into law by a Federal Appropriation Act, or as of fiscal year 1998, an Appropriation and an "other than Appropriations Act". (Ref: 92) When a MYP candidate is disapproved, usually there is not any documentation at all. It is simply not appropriated or authorized by Congress. In the rare occurrence when the disapproval is written into law, it merely says the MYP request has been rejected. Furthermore, when a MYP request is approved, the legislation merely says the request is approved. Congress' reasons for this legislation are not expressly given for the approval or rejection in writing. Indicators may be sent through liaison channels between Congress and DOD or through Congressional hearings, but the reasons for approval and rejection are normally not provided in writing. GAO assessments of some MYP candidates are utilized by this thesis to provide insight into why these programs may have been approved or rejected.

When seeking the precise data on MYP requests that are considered by Congress for approval or rejection, it is impossible to find every request. There are many avenues that lead to Capitol Hill. The majority of requests are submitted via the standard procedure within the DOD Appendix to the President's budget. Other requests may be submitted out of cycle through OSD to Congress. Sometimes, the Services go directly to Congress and bypass OSD. Finally, there have been times when Congress takes the initiative to grant approval for programs, which they desire to see entered into as MYPs. As a result, it is occasionally not known that Congress is considering a program for MYP, until the Appropriation and Authorization Acts are passed into law and made public. The researcher pieced together data from many acts of legislation as well as DOD records to get the most accurate picture possible.

G. DEFINITIONS AND TERMS

Appropriations: A provision of legal authority by an act of Congress, which permits Federal agencies to incur obligations and to make payments out of the Treasury for specific purposes. An appropriation usually follows an act of authorization legislation. (Ref. 53: vol. 2A 010107.B.5)

Authorization: Legislation enacted by Congress which establishes or continues the legal operation of a Federal program or agency for a specific period of time. This legislation is normally a prerequisite to appropriation legislation. (Ref. 53: vol. 2A 010107.B.6)

Cancellation: The cancellation, within a contractually specified time, of the total requirements of all remaining program years. Cancellation results when the contracting officer notifies the contractor of nonavailability of funds for contract performance for any subsequent program year, or fails to notify the contractor that funds are available for performance of the succeeding program year requirement. (Ref. 56: 17.103)

Cancellation Ceiling: The maximum cancellation charge that the contractor can receive in the event of cancellation. (Ref. 56: 17.103)

Cancellation Charge: The amount of costs, which have not yet been recovered, that would have been recouped through amortization over the full term of the contract, including the term canceled. (Ref. 56: 17.103)

Economic Order Quantity (EOQ) Procurement: An exception to the full funding policy, which allows the use of advance procurement to purchase more than one fiscal year's program increment of components, materials, and parts in order to obtain economical advantages, sustain a production line, to support low rate initial production, etc.. (Ref. 99: p. 3)

Multiyear Procurements: The process, planning and contract for purchase of property or services for more than one, but no more than five, program years. A multiyear contract may provide that performance under the contract during the second and following years of the contract is

contingent upon the availability of appropriated funds. A multiyear contract may also provide for a cancellation payment to be made to the contractor if funding is not available. The key difference between a multiyear contract and a series of yearly contracts is that the multiyear contract is acquiring end products for multiple years vice only for an annual requirement. (Refs. 112: 2306b and 99: 17.103)

President's Budget: The budget that the President proposes to Congress for a particular fiscal year. It is usually transmitted in late January or early February preceding the new fiscal year.

Program Objective Memorandum (POM): The final product of the DOD programming process. It describes the resource allocation decisions of the Military Departments.

Termination Liability: The maximum cost the Government would incur if a contract were terminated. (Ref. 99: p.4)

Total Obligation Authority (TOA): The sum of all budget authority plus amounts authorized to be credited to a specific fund.

H. THESIS ORGANIZATION

This thesis consists of the following five chapters:

1. Introduction. The introduction provides the overall framework of the thesis. It provides a general overview and defines the thesis' objective, scope, research questions, methodology, assumptions, limitations and definitions.
2. Background. This chapter provides background on DOD and Government acquisition reform initiatives. It describes the legislation, regulations and procedures applicable to DOD MYP and concludes by describing Congress' DOD oversight responsibilities.

3. Methodology and Data Presentation. This chapter presents raw data to be used for analysis. These data include the Congressional MYP approval/rejection results from fiscal years 1982 through 1999 and GAO assessments of several of these MYP candidates.

4. Data Analysis and Interpretation. This chapter synthesizes the issues raised by the research questions utilizing the data presented in Chapters I, II and III, as well as other data and interviews relevant to the analysis.

5. This chapter answers the research questions, provides recommendations to improve the MYP process and offer areas for future research.

II. BACKGROUND

A. GOVERNMENT REFORM

In the 1980s, America's focus was on domestic economy and the great communist threat led by the Soviet Union. President Ronald Reagan was leading the charge to thwart the Communists while at the same time being instrumental in causing the Federal debt to spiral higher and higher. The environment of the 1990s has experienced a great change in America's focus. The economy has thrived and the Soviet threat has diminished. Attention has shifted from the Cold War to the enormous Federal debt of the United States.

President Bill Clinton and Vice President Al Gore have taken the lead in reinventing the Government. The following are select quotations from the National Performance Review (NPR), which provide a feeling for the environment that the Clinton Administration is fostering in today's government.

We (the President and Vice President) agreed (in 1993) that we needed to bring a revolution to the federal government – to put the wheels back on. We agreed right then that we needed to bring a revolution to the federal government: We called it reinventing government.

We went to work to create a government that works so much better and costs so much less that Americans will regain faith in the institution of government.

Our models, teachers, and partners in this historic undertaking are America's best-run companies –companies that led the quality revolution of the past two decadesThey have been through the learning curve, they have made the mistakes and fixed them, all while dealing with the risks of a free market.

We are making the big change. Here are some examples: The smallest federal civilian workforce in over 30 years...A big reduction in red tape and government bureaucracy... A new spirit in government, in which creativity and innovation are rewarded, not frowned upon.

Reinvent to get the job done with less. Seek congressional relief from wasteful restrictions.

Money is becoming increasingly scarce. In this world, the government can get the job done if – and only if – we unlock this unused

human potential available to us. Agency heads personally need to do things to unlock this potential. (Ref. 59: chp. 1)

It is clear from these statements and recommendations that the Presidential Administration is trying to motivate Government personnel, to seek to do "more with less" and to adopt methods of proven successful commercial companies. If legislation stands in the way, people should lobby to get these restrictive laws changed. If "rice bowl" protection is holding back progress of making improvements in the system, apply pressure to drive change. The Clinton Administration has laid the groundwork for Government change. They have provided incentives to reward those who are making change and joining the "reinventing government" team.

B. ACQUISITION REFORM

Government reinvention naturally leads to acquisition reform. The Clinton Administration has led by example and directed military and civilian agencies alike to reform the Government's acquisition system.

1. Section 800 Panel

The Fiscal Year 91 National Defense Authorization Act, section 800, Public Law 101-510 mandated the creation of the Acquisition Law Advisory Panel, commonly known as the Section 800 Panel. This committee was a vehicle for Congress to begin the process of streamlining Government acquisition in the name of achieving the "peace dividend" as a result of the end of the "Cold War". The panel reviewed 600 laws. They recommended changing 298 laws and doing away with 124 of them. (Ref. 98) Significant recommendations from the panel include:

- Simplify acquisition procedures for purchases under \$100,000.

-Initiate 'pilot' commercial programs. These prototype programs would use commercial rather than military acquisition procedures.

-Increase the use of commercial specifications.

-Limit application of regulations on procurement of commercial items. (Ref. 7)

2. National Performance Review (NPR)

As discussed above, the purpose of the NPR was to improve the efficiency and effectiveness of Government. Major points of the NPR include a call for a revision of Federal procurement regulations from rigid rules into guiding principles, decentralizing authority to purchase computers, testing and electronic marketplace, increasing the small purchases threshold, and relying more on commercial off-the-shelf (COTS) products. (Ref. 94) Additional highlights include: permitting taxpayers to pay by credit card, Government consolidation and downsizing, adopting a two-year vice one-year budget cycle, giving supervisors greater authority, involving private industry to a greater degree in the inspection process and privatization of some non-Government inherent functions. (Ref. 103: pp. 1-2)

3. Federal Acquisition Streamlining Act of 1994 (FASA).

This legislation was meant to continue the acquisition reform movement by legislating or codifying change. Many of the recommendations from the NPR and the Section 800 Panel were incorporated into FASA. Highlights of FASA include:

-Direct creation of an electronic acquisition network. This requirement was realized in the Federal Acquisition Computer Network (FACNET).

-Set preference for acquisition of commercial items.

-Raise small purchase thresholds.

-Encourage use of purchase credit cards.

-Streamline the bid/protest procedures.

-Eliminate many Government specific clauses.

-Apply commercial procedures to Government.

-Streamline acquisition procedures. (Refs. 5 and 94: p. 66)

In general, FASA was designed to streamline the lengthy acquisition procedures to make Government procurement operate more efficiently like the best world-class commercial corporations.

4. Acquisition Reform Mandate for Change.

Secretary of Defense William Perry promulgated the Acquisition Reform Mandate for Change in response to the Clinton Administration direction. This mandate was consistent with the movement to make Government and the DOD operate more efficiently. To meet the new National security challenges (political, economic, and military) DOD must:

(1) Maintain its technological superiority, and a strong, globally competitive National industrial base that can support the Nation's future defense needs, by being able to:

-Rapidly purchase commercial and other state-of-the-art products and technology from reliable suppliers who utilize the latest manufacturing and management techniques;

-Assist in the conversion of defense-unique companies to dual-use production;

-Aid in the transfer of military technology to the commercial sector; and,

-Preserve defense-unique core capabilities.

(2) Reduce acquisition costs (including DOD's overhead costs) through:

-The adoption by DOD of business processes characteristic of world-class customers and suppliers (including processes that encourage DOD's suppliers to do the same); and,

-Relief from the requirement to impose Government-unique terms and conditions on its contractors to the maximum extent practicable. (Ref. 95: p. 3)

Secretary Perry further declared achievement of these goals would be challenging and that many barriers were firmly entrenched in the Government's organization. For instance, industry identified the following significant barriers:

-Unique laws and regulations imposed on contractors such as Cost Accounting Standards, cost and pricing data, accounting systems, oversight requirements, socio-economic requirements, technical data rights, security requirements, DOD specifications and standards.

-Instability of DOD's requirements and associated funding make it difficult to predict future market requirements.

-Imposition of Government specific rules on subcontractors.

-Government's right to terminate contracts for its convenience.

-Industry's perception that they are "walking through a minefield" of laws and regulations, that they will sometime slip up and face criminal or civil legal action which will hurt the firm's reputation. (Ref. 94: p. 4)

5. Federal Acquisition Reform Act of 1996 (FARA)

This legislation was passed into law as Division D of the National Defense Authorization Act for Fiscal Year 1996 (Public Law 104-106). FARA continued the acquisition streamlining trend set by FASA. Highlights of FARA include:

-Defining efficient competition.

-Increasing thresholds for higher level approval.

-Establishing efficient competitive range determinations.

-Exempting requirements and raising thresholds for commercial items. (Ref. 57)

FARA was later combined with the Information Technology Management Reform Act of 1996 (ITMRA), to be renamed the Clinger-Cohen Act of 1996. ITMRA made several streamlining initiatives consistent with acquisition reform of the 1990s. Highlights of ITMRA include:

-Give Information Technology (IT) procurement authority back to the agencies.

- Eliminate Federal Information Resources Management Regulation which governed acquisition and management of Federal Information Processing resources.
- Move the General Services Board of Contract Appeals authority to hear bid protests on IT contracts to the GAO.
 - Encourage incremental acquisition of IT systems.
 - Encourage acquisition of commercial off-the-shelf (COTS) IT products.
 - Authorize Federal Agencies to explore alternative approaches for IT.
 - Promote management processes that maximize value and accurately assess risk of IT acquisitions. (Ref. 100: p.1)

-Ensure information security policies, procedures and practices are adequate.

The combined effects of FASA and Clinger/Cohen were to implement the acquisition reform initiatives that the citizens of the United States demanded, and the Congress and the Clinton Administration delivered.

C. MULTIYEAR PROCUREMENT LEGISLATION AND REGULATION

The historical record of MYP since the 1960s demonstrates that the level of Congressional Control over DOD's MYP process has varied greatly.

The 1960s were a period of loose congressional control, where multiyear contracts flourished and were very successful. The 1970s marked a stark shift from the 1960s. The Department of the Navy presented Congress with two very large cancellation charges. This prompted Congress to clamp down on multiyear contracts, by legislating a maximum \$5 million cancellation ceiling. This act virtually eliminated major acquisitions from MYPs for the remainder of the decade. (Ref. 100: p.8)

In the early 1980s, Congress loosened control and encouraged use of MYPs in efforts to reduce cost and increase program stability. The following statement is from the fiscal year 1982 DOD Authorization Act:

The Congress finds that in order to ensure national defense preparedness, to conserve fiscal resources, and to enhance defense production capability, it is in the interest of the United States to acquire property and services for the Department of Defense in the most timely, economic, and efficient manner. It is therefore the policy of the Congress that services and property (including weapon systems and associated items) for the Department of Defense be acquired by any kind of contract, other than cost-plus-a-percentage-of-cost contracts, but including multiyear contracts, that will promote the interest of the United States. Further, it is the policy of the Congress that such contracts, when practicable, provide for the purchase of property at times and in quantities that will result in reduced cost to the Government and provide incentives to contractors to improve productivity through investment in capital facilities, equipment, and advanced technology. (Ref. 82: sec 909(a)(2))

In the late 1980s, the tide had changed again tending towards tighter congressional control. DOD was now required to submit all MYP candidates in the Presidential Budget Request. Congress, often with assistance from the GAO, would then analyze each proposal. Congress had to specifically authorize by written act of law before DOD could enter into MYP. (Ref. 82: pp. 9-10)

The Fiscal Year 1989 National Defense Authorization Act stated that a MYP must achieve 10 percent savings over the current negotiated contracts or 12 percent over the costs of a new series of annual contracts if recent contract experience does not exist. (Ref. 83: sec 107(d)(3))

The Fiscal Year 1991 National Defense Authorization Act eased the required savings or cost avoidance rate from 10 percent to "substantial". (Ref. 85: sec. 808)

In the early to mid 1990s, there was a call for greater fiscal efficiency in Government. As part of FASA, Congress provided the MYP legislation that is virtually intact today as United

States Code (USC) Title 10-Armed Forces, Section 2306b. This statute states that the head of an agency may consider entering into multiyear contracts for the purchase of property whenever the following criteria are met:

-Substantial Savings. The use of a MYP contract will result in substantial savings of total anticipated costs versus utilizing a series of annual contracts.

-Stable Requirement. The minimum need for the material to be purchased is expected to remain substantially unchanged during the potential contract period in terms of procurement rate, total quantities and production rate.

-Stable Funding. There is a reasonable expectation that the agency will request the required funding to support the MYP.

-Stable Design. The material has a stable design in which the technical risks are not excessive.

-Realistic Cost Savings. The estimates of both the MYP contract cost and the cost avoidance are realistic as compared to a series of annual procurements.

-Promote National Security. Using MYP to procure this item will promote the national security of the United States.

Other highlights from USC 10-2306b include:

Cancellation Notice. Before any MYP with a cancellation ceiling in excess of \$100,000 is awarded, the head of the agency must give written notification to Congress.

Termination Notice. A MYP cannot be terminated without notification to Congress at least ten days prior to termination. (Ref. 112: sec. 2306b)

When the legislation states that Congress must be notified, it means the following four committees/sub-committees must be notified in writing:

-Committee on Armed Services of the Senate.

-Subcommittee on Defense of the Committee on Appropriations of the Senate.

-Committee on National Security of the House of Representatives.

-Subcommittee on National Security of the Committee on Appropriations of the House of Representatives. (Ref. 91)

The Fiscal Year 1998 DOD Authorization Act made the following change to USC 10-2306b: MYPs cannot be awarded for greater than \$500 million without written act of law in the form of an appropriation act and an "other than appropriation act". This legislation is analyzed in Chapter IV, Section D.

In addition to the legislation above, the annual DOD appropriation and authorization bills also currently contain the following language pertaining to MYPs. DOD must attain Congressional approval for any multiyear candidate which meets any of the following:

-The proposed MYP's value is expected to be in excess of \$500 million.

-There are economic order quantity (EOQ) procurements in excess of \$20 million in any one year.

-There are EOQ procurements in advance of a MYP contract, which is greater than \$20 million in any one year.

-There will be unfunded contingent liability in excess of \$20 million in any one year.

-The procurement quantities of a MYP approved previously will be changed. (Ref. 53: Chp. IV)

D. MULTIYEAR PROCUREMENT APPROVAL PROCESS

The Defense Department identifies MYP candidates during the Planning, Programming and Budgeting System (PPBS) process. During the Programming phase, each Service prepares a Program Objective Memorandum (POM). The POM identifies the specific programs which the

agency proposes for the Future Years Defense Plan (FYDP). The Services then present their POMs to the Defense Resource Planning Board (DRPB). The DRPB then makes final decisions about the POMs in the form of Program Decision Memoranda (PDMs). The comptrollers then take the direction from the PDMs and form the proposed budget. The Defense Department then submits their MYP candidates within the DOD budget to the President. Major Acquisitions with expected values in excess of \$500 million are required to submit exhibits MYP-1 through MYP-4 from the DOD Financial Management Regulation. These exhibits for the T-45TS program that was requested in the Fiscal Year 1999 Presidential Budget are included as Appendices B through E. The exhibits are briefly summarized as follows:

-Exhibit MYP-1, Multiyear Procurement Criteria. This exhibit describes the system being procured, demonstrates how the six criteria for MYP are satisfied, demonstrates the savings and advantages of MYP, describes the impact on the industrial base and provides a summary of the proposal.

-Exhibit MYP-2, Total Program Funding Plan. This exhibit provides detailed financial data including procurement quantity, annual procurement costs, MYP costs, MYP savings, and outlays for the total program.

-Exhibit MYP-3, Contract Funding Plan. MYP-3 provides data similar to MYP-2, but only for the proposed MYP.

-Exhibit MYP-4, Present Value Analysis. This exhibit performs a present value comparison between performing the program with a series of annual contracts versus a MYP.

The Office of Management and Budget (OMB) is the President's organization, which is responsible for preparing the President's Budget. The President's Budget defines how much money the Executive Branch claims they require to operate for the following fiscal year. This includes identification of when they want to enter into a MYP. The President's budget will offer

proposed legislative language of what the President (and DOD) would like to see legislated by the appropriation and authorization bills. (Refs. 113: p. 7 and 27)

The authorizing and appropriating committees described earlier in the House of Representatives and the Senate will then begin the legislative process of verifying the proposed MYP candidates. The decision on the MYP candidate will go through a series of votes from subcommittees, to committees, to all of the House and the Senate to the Conference Committees. Finally a separate DOD authorization and appropriation bill is sent to the President for ratification. Once the President approves each bill, it becomes law. The specific program must be approved for MYP in both the appropriation and authorization bill in order for the specific MYP program to be entered into by DOD. (Ref. 28: pp. 28-36)

E. CONGRESSIONAL OVERSIGHT

The framers of the United States constitution established three independent, yet interrelated branches of Government. Their objective was to create a separation of powers, which restrained any one branch from becoming too powerful and would foster a spirit of cooperation that would be necessary for the Government to operate effectively. Essentially, the Congressional branch enacts the laws, the Judicial branch interprets the laws, and the Executive branch executes them. The spirit of cooperation, which is required, is fundamental to the national decision making. (Ref. 93)

Article 1, Section 8 of the United States Constitution gives Congress the authority to review Government operations and administration including DOD. The level of Congressional review or oversight over the Government and DOD has increased over the past 30 years for several reasons. First, the public's growing distrust of Government officials punctuated by presidential scandals has led the charge for increasing oversight. Second, media hyped stories of

exceedingly high priced hammers and toilet seats have lead the public to believe that additional oversight is required to ensure procuring agents are performing their job properly. Thirdly, growth of entitlement spending has put pressure on Government to reduce spending in areas other than entitlements, namely discretionary areas. DOD is the largest discretionary spending account within the Government. Forth, the further time passes from the draft wars, fewer members of Congress will have served in the military. This raises their need for Congress to ask more questions to ensure that DOD is performing properly and spending the country's tax dollars efficiently. These factors have all been significant pressures to increase Congressional oversight. (Ref. 28: pp.23-24.)

F. SUMMARY

The 1990s have been a decade of Government reform highlighted by acquisition reform. The President has fostered an environment that is open to and encouraging change. The DOD budget process, which includes the MYP approval, is a lengthy process that involves many governmental organizations in the Executive as well at the Legislative Branches. The process allows many different interest groups to have input to the process, but as a result, is very time consuming. The following chapter will provide the MYP approval data and GAO MYP assessments that are analyzed in Chapter IV.

III. METHODOLOGY AND DATA PRESENTATION

A. METHODOLOGY FOR ATTAINING DATA

This section outlines the methodology for acquiring the data presented in this chapter.

The first section is a table that represents every MYP candidate that the DOD has proposed since 1982. These data were gathered from Presidential Budget Requests, DOD Authorization and Appropriation Acts, OUSD (Comptroller) MYP reports and an Assistant Secretary of the Navy Aviation MYP report. The total obligation authority (TOA) savings projections were gathered from OUSD (Comptroller) MYP reports and personal phone interviews. The data on the programs that were terminated were gathered by conducting a literature review and by interviewing numerous DOD officials. The data on approved MYPs that did not reach contract award as a MYP were attained from OUSD (Comptroller) reports, Presidential Budget Requests and a literature review.

The GAO reports that are summarized in the second section below are all evaluations of MYP candidates or existing programs. They were attained by a literature review in the Dudley Knox Library at the Naval Postgraduate School and at the GAO internet web site.

B. MULTIYEAR PROCUREMENT APPROVAL/DISAPPROVAL RECORD

Table 3.B.1 illustrates Congress' approval/disapproval record for DOD MYP requests for fiscal years 1982 through 1999. It also shows each MYP candidate's estimated TOA savings for MYPs which were approved, awarded and not terminated. The DOD determined these TOA estimates. Programs that were approved, but the DOD did not enter into MYP are annotated with the phrase, "Not executed as MYP". The MYPs which were awarded and then terminated

at a later date are annotated by the word, "Terminated". The Army small arms programs, which were requested in 1998, were pre-approved by Congress and thus did not submit estimated TOA savings. They are annotated " Not required".

C. GENERAL ACCOUNTING OFFICE REPORTS

The following are analyses of MYP candidates and existing programs performed by the GAO during the 1980s and 1990s. The results of these reports are not fact, but they are deemed to be an objective opinion of the MYP decision criteria.

1. Procurement: An Assessment of the Air Force's F-16 Multiyear Contract,

February 1986

This assessment was an analysis of issues relating to the F-16 MYP for fiscal years 1982-1985. It reported that in October 1981, the time of DOD's submission of the MYP request to Congress, savings were projected to be \$246 million or 7.7% for a MYP versus annual funding. The F-16 program was approved for MYP by the Fiscal Year 1982 Defense Appropriations Act. (Ref.108)

2. Procurement: Assessment of DOD's Multiyear Contract Candidates,

September 1988

This report was an analysis of the seven MYP candidates proposed by DOD in the amended fiscal years 1988-1989 biennial budget. The objective was to determine if the candidates proposed by the DOD satisfied the legislative criteria for MYP. Table 3.C.1 summarizes the results.

Table 3.C.1 is a brief summary of the most significant parts of GAO's analyses of the MYP candidates proposed for fiscal year 1989.

Table 3.B.1

| Year | Requested Program | Approved | Disapproved | DOD Estimate of TOA Savings in Millions of US\$ |
|-------------|--------------------------------------|-----------------|--------------------|--|
| 1982 | F-16 Airframe | X | | 256.8 |
| | TRC-170 Radio | X | | 16.0 |
| | C-2 Airframe | X | | 89.0 |
| | UH-60 Helicopter | X | | 79.4 |
| | ALQ-136 Radio Jammer | X | | 34.6 |
| | SM-1 (Rocket Motor) | X | | 10.1 |
| | M-1 Fire Control | X | | 117.3 |
| | NAVSTAR Satellite | X | | 212.2 |
| | | | | |
| 1983 | Multiple Launch Rocket System | X | | 209.1 |
| | T-700 Engine | X | | 33.7 |
| | KC-10 | X | | 658.0 |
| | NATO Sea sparrow (Kits) | X | | 36.8 |
| | MK 46 Torpedo | X | | 86.0 |
| | DMSP | X | | 58.2 |
| | MK 60 Tank Thermal Sight | X | | Not executed as MYP |
| | Ch-53 Helicopter | | X | |
| | EA-6B | | X | |
| | MULE, AN/PAQ-3 | | X | |
| | TAO Fleet Oiler | | X | |
| | A-6E Airframe | | X | |
| | Standard Missile | | X | |
| | | | | |
| 1984 | B-1B (Airframe and Major Subsystems) | X | | 1,188.2 |
| | B-1B Spares | X | | 158.9 |
| | TB-16 Towed Array | X | | 2.3 |
| | MK 45 Gun Mount/MK-6 Hoist | X | | 61.8 |
| | A-6E TRAM Sensors | X | | 73.8 |
| | M-9 Armored Combat Earthmover | X | | Not executed as MYP |
| | AH-64 Engine | X | | 41.4 |
| | Bradley Components | X | | 109.1 |
| | CNCE | | X | |
| | LSD-41 | | X | |
| | F-15 Aircraft | | X | |
| | KC-135 Re-engine | | X | |
| | MK-30 Target | | X | |
| | AN/SSQ-62 DICASS Sonobuoy | | X | |
| | AN/TSQ-111 Communications Element | | X | |

Table 3.B.1 (cont.)

| Year | Requested Program | Approved | Disapproved | DOD Estimate of TOA Savings in Millions of US\$ |
|-------------|------------------------------------|-----------------|--------------------|--|
| 1984 | TOW 2 Missile | | X | |
| | F/A-18 Engine | | X | |
| | C-47D Modification | | X | |
| 1985 | UH-60/EH-60 Airframe | X | | 129.5 |
| | 5-Ton Truck | X | | 58.1 |
| | Ch-47 Modernization | X | | 153.4 |
| | Bradley Turret Drive | X | | 10.6 |
| | Shop Equipment Contact Maintenance | X | | 74.3 |
| | AN/SSQ-36 Sonobuoy | X | | 1.6 |
| | F-16 Airframe | X | | 259.6 |
| | DCSC Satellite | X | | 139.8 |
| | CH-53 Mainframe | X | | 129.3 |
| | Tow 2 Missile | | X | |
| | Bushmaster 25mm Gun | | X | |
| | F-16 Simulator | | X | |
| 1986 | T-700 Series Engine | X | | 71.1 |
| | M1A1 Tank Chassis | X | | 403.1 |
| | M1A1 Tank Engine | X | | 160.8 |
| | M1A1 Fire Control | X | | 96.8 |
| | Bradley Transmission | X | | 25.5 |
| | LHD | X | | Not executed as MYP |
| | MK-46 Torpedo Program | X | | Terminated |
| 1987 | M9 ACE | | X | |
| | UH-60/EH-60 Airframe | X | | 139.8 |
| | STINGER Missile System | X | | 211.7 |
| | PATRIOT Missile System | X | | 445.3 |
| | MK-45 Gun Mount/Hoist | X | | 48.7 |
| | Defense Support Program | X | | 455.5 |
| | Titan IV (CELV) | X | | 430.0 |
| | F/A-18 Aircraft | | X | |
| | HARM Missile | | X | |
| | | | | |
| 1988 | Hawk Missile | X | | Terminated |
| | TOW II Missile | X | | 53.0 |
| | HMMWV | X | | Not executed as MYP |

Table 3.B.1 (cont.)

| Year | Requested Program | Approved | Disapproved | DOD Estimate of TOA Savings in Millions of US\$ |
|-------------|-------------------------------|-----------------|--------------------|--|
| 1988 | AN/ALQ-136 Jammer | | X | |
| | Harpoon Missile | | X | |
| | | | | |
| 1989 | CH-47 Mod | X | | 118.3 |
| | MLRS | X | | 126.9 |
| | UHF Follow-on Satellite | X | | 194.8 |
| | AV-8B Aircraft | X | | 165.5 |
| | DMSP | X | | 99.6 |
| | F-16 Aircraft | X | | Not executed as MYP |
| | T-700 Engine (For H-60) | X | | 44.6 |
| | M1 Tank | X | | Not executed as MYP |
| | AH-64 Helicopter | X | | Not executed as MYP |
| | | | | |
| 1990 | M1 Tank Chassis | X | | Not executed as MYP |
| | M1 Tank Engine | X | | Not executed as MYP |
| | M1 Tank Fire Control Sys | X | | Not executed as MYP |
| | Palletized Load System (FHTV) | X | | 153.1 |
| | Bradley FVS Vehicle | X | | Not executed as MYP |
| | Bradley FVS Tow 2 Subsystem | X | | Not executed as MYP |
| | DDG-51 Destroyer | X | | Not executed as MYP |
| | SH-60B Helicopter | X | | Not executed as MYP |
| | SH-60F Helicopter | X | | Not executed as MYP |
| | Maverick Missile | X | | Not executed as MYP |
| | HMMWV | | X | |
| | Patriot | | X | |
| | AH-64 Helicopter | | X | |
| | Improved Recovery Vehicle | | X | |

Table 3.B.1 (cont.)

| Year | Requested Program | Approved | Disapproved | DOD Estimate of TOA Savings in Millions of US\$ |
|-------------|--|----------|-------------|---|
| 1990 | FMTV | | X | |
| | Stinger-RMP | | X | |
| | Line of Sight – Rear | | X | |
| | UH-60M Helicopter | | X | |
| | Phoenix Missile | | X | |
| | F/A 18 Aircraft | | X | |
| | MK-45 Gun Mount | | X | |
| | E-2C Aircraft | | X | |
| | EA-6B Aircraft | | X | |
| | Tomahawk Missile | | X | |
| | F-15 Aircraft | | X | |
| | Combined Effect Munitions | | X | |
| | KC-135 Re-engine | | X | |
| | B-2 Engine | | X | |
| | B-2 Airframe | | X | |
| | DSP Satellite | | X | |
| | NAVSTAR GPS | | X | |
| | C-17 Aircraft | | X | |
| | Medium Launch Vehicle | | X | |
| | AN/TRC-170 Radio | | X | |
| | AMRAAM Missile | | X | |
| | | | | |
| 1991 | Line of Sight (Avenger) | X | | 60.8 |
| | FMTV | X | | Terminated |
| | LCAC Landing Craft | X | | Not executed as MYP |
| | LHD Amphibious Ship | X | | Not executed as MYP |
| | NAVSTAR GPS | X | | 115.3 |
| | MK-45 Gun Mount/MK-6 Ammo Hoist | X | | 48.4 |
| | UH-60 Black Hawk Helicopter | | X | |
| | | | | |
| 1992 | C-17 Airframe | | X | |
| | ARMY Tactical Missile System (ATTACMS) | X | | Not executed as MYP |
| | MK-48 ADCAP Torpedo | X | | 50.3 |
| | UH-60 Black Hawk Helicopter | X | | 67.0 |
| | | | | |
| 1993 | Enhanced Modulated Signal Processor | X | | Not Available |
| | Defense Support Program | X | | 90.1 |

Table 3.B.1 (cont.)

| Year | Requested Program | Approved | Disapproved | DOD Estimate of TOA Savings in Millions of US\$ |
|--------------|---|-----------------|--------------------|--|
| 1994 | 120mm Tank Rounds | X | | 137.0 |
| 1995 | No New MYPs Requested | | | |
| 1996 | C-17 Airframe | X | | 834.8 |
| | C-17 engine | X | | 175.6 |
| | Global Positioning System | X | | 30.3 |
| 1997 | UH-60 Blackhawk Helicopter | X | | 47.8 |
| | Apache Longbow Helicopter | X | | 131.8 |
| | M1A2 Tank Upgrade | X | | 236.0 |
| 1998 | Javelin Missile | X | | 102.4 |
| | DDG-51 Destroyer | X | | 788.0 |
| | MK19-3 grenade machine guns | X | | Not required |
| | M16A2 rifles | X | | Not required |
| | M249 Squad Automatic Weapons | X | | Not required |
| | M4 carbine rifles | X | | Not required |
| | M240B machine guns | X | | Not required |
| | Army Tactical Missile Sys. (ATTACMS) | X | | 35.1 |
| 1999 | E-2C Aircraft | X | | 204.0 |
| | Longbow Hellfire Missile | X | | 133.8 |
| | Medium Tactical Vehicle Replacement | X | | |
| | Family of Medium Tactical Vehicles | X | | 118.8 |
| | AV-8B Aircraft | X | | 33.0 |
| | Apache Longbow Radar | X | | 79.4 |
| | T-45 Aircraft | | X | |
| Total | | | | 11,537.0 |

(Refs. 10-22, 29-41, 60, 64, 66, 69, 73, 75, 77-81, 99, and 103-110)

Table 3.C.1

| System | DOD Est. MYP Savings Percent | Realism of Savings | Requirement Stability | Funding Stability | Design Stability |
|-------------------------|------------------------------------|--------------------------|--------------------------|----------------------|---------------------|
| CH-47 D | 13.2 | ? | | ? | |
| H-60 | 12.2 | ? | ? | | |
| MLRS | 11.4 | ? | | | |
| AV-8B | 11.9 | | ? | ? | |
| UHF Follow-on Satellite | 11.5 | ? | | | ? |
| DMSP | 18.1 | ? | | | |
| F-16 | 5.7 | ? | ? | | |

Table Code:

"?" indicates that the system does not clearly meet the legislated criterion. A "?" does not necessarily mean the system was an inappropriate candidate, but that there was increased risk in that area. This risk must be weighed against the other factors to determine whether MYP authority should be granted.

a. ***CH-47D Chinook Helicopter Modernization***

The analysis indicated stability of funding and realism of savings as not clearly meeting the legislated criteria. This modification has been in MYP since 1985. The Army did not have the contractor's cost estimate for an annual contract. The Army made its own determination of the annual cost estimate. Therefore, the cost savings comparing annual and multiyear are questionable. Additionally, Army officials stated that the CH-47D modernization program would not be funded due to overall funding constraints. Office of Secretary of Defense (OSD) officials claimed they would support the program. This ambiguity led GAO to the conclusion that funding was not stable and that the Army was not completely committed to this program.

b. ***T-700 Engine for H-60 Helicopter***

The analysis indicated requirement stability and realism of savings as not clearly meeting the legislated criteria. The older version of the T-700 engine has been on MYP. Accurate annual procurement estimates have not been requested nor provided by the contractor.

The proposed quantity was for 676 engines. The Army expected the volume could increase to at least 1,156 due to: (1) increased Black Hawk procurement, (2) potential additional engine for the Apache helicopter and (3) engine procurement for Air Force requirements. This was potentially a tremendous growth in the requirement, which led GAO to its conclusion that the requirement was not stable.

c. ***Multiple Launch Rocket System (MLRS)***

The analysis indicated savings realism as not clearly meeting the legislated criteria. The MLRS was currently in the last year of a MYP. The proposed MYP cost estimate was based on the existing program. The Army requested both annual and MYP cost estimates and expected to receive them by September 1988.

d. ***AV-8B Harrier Aircraft***

The analysis indicated stability of requirement and funding as not clearly meeting the legislated criteria. The Marine Corps' requirement was steady, but the Department of the Navy's commitment to the AV-8B was low. The Navy's amended fiscal year 1989 budget request planned to stop production following the fiscal year 1989 procurement. "OSD and Navy officials told us (GAO) that the program was in search of stability and that one reason for proposing a multiyear contract was an attempt to provide the program the stability it has historically lacked." (Ref. 110: p. 20)

e. ***UHF Follow-on Satellite System***

The analysis indicated savings realism did not clearly meet the legislated criteria. This system had not been produced. The Navy's estimates were based on the assumption that savings would be similar on this satellite program as previously purchased communication satellite programs. The Navy had received both annual and multiyear proposals from three contractors, but did not make them available to GAO because of source selection sensitivity.

The Navy assured GAO that the actual proposals were consistent with the estimates provided to GAO.

f. *Defense Meteorological Satellite Program*

The analysis indicated realism of savings did not clearly meet the legislated criteria. The Air Force based its MYP estimates on another, yet similar program. Limited cost data was available to support the annual contract estimates. The Air Force's cost and savings estimates were inconsistent with the budget plans for fiscal years 1990-1994.

g. *F-16 Fighting Falcon Aircraft*

The analysis indicated that stability of requirement and realism of savings did not clearly meet the legislated criteria. The MYP package was submitted for a quantity of 630 airframes. The Air Force's budget only funded 480 F-16 aircraft during this period. Air Force officials considered diverting funding to the A-7F aircraft, which would reduce the F-16 MYP quantity down to only 400. The Air Force's savings estimates were not based on current proposals, but on two prior multiyear contracts. (Ref. 110: pp. 10-30)

3. Procurement: Assessment of DOD's Multiyear Contract Candidates,

September 1989

This report is an analysis of the eight of the 27 MYP candidates proposed by DOD in the amended fiscal years 1990-1991 biennial budget. The objective was to determine if the candidates satisfied the legislative criteria for MYP. Table 3.C.2 summarizes the results.

Table 3.C.2

| System | DOD Est. MYP Savings Percent | Realism of Savings | Requirement Stability | Funding Stability | Design Stability |
|----------|------------------------------------|--------------------------|--------------------------|----------------------|---------------------|
| Maverick | 12.3 | | ? | ? | |
| KC-135R | 13.0 | ? | | | |
| CEM | 10.0 | ? | | | |
| M1 Tank | 10.9 | ? | | | ? |
| Bradley | 12.5 | | | | |
| PLS | 12.7 | ? | ? | ? | ? |
| F/A-18 | 5.5 | | ? | ? | |
| E-2C | 13.6 | | ? | | ? |

Table Code: "?" signifies same meaning as in Table 3.C.1.

The following will be a brief summary of the most significant parts of GAO's analyses of the MYP candidates that are summarized in Table 3.C.2:

a. ***Maverick Imaging Infrared Missile***

The analysis indicated stability of requirement and funding as not clearly meeting the legislated criteria. The Air Force reduced the program requirement by 37,168 missiles (61 percent) due to budget constraints and reconsideration of DOD's anti-armor requirements. The Navy had concerns over testing.

b. ***KC-135R Re-engine Program***

The analysis indicated savings realism did not clearly meet the legislated criteria. The Air Force MYP savings estimate was based on unit pricing data provided by the contractor for 36 engine sets per year. The Air Force assumed their projected MYP would avoid base-year price increases, even though the quantities to be procured were less than 36 in some years. The contractor projected there would not be any saving on quantities less than 36. The Air Force also used Office of Management and Budget (OMB) inflation rates. GAO estimated the savings would be only 2.7 percent vice the 16.8 percent projected by the Air Force.

c. ***Combined Effects Munition (CEM)***

The analysis indicated savings realism did not clearly meet the legislated criteria.

The Army did not have savings data specific to CEM. They assumed the savings would be similar to other MYP programs of ten to twelve percent. Significant savings had already been achieved through a dual-source acquisition strategy.

d. ***M1 Tank***

MYPs were submitted for the chassis, engine and Fire Control System Thermal Imaging System for the M1 tank. The analysis indicated savings realism and design stability did not clearly meet the legislated criteria.

(1) **M1 Tank Chassis.** The Army's savings were based on one of the contractor's two plants being funded by DOD for closing. The Army counted on savings to occur from reduced overhead rates. The House Armed Services Committee recently proposed deleting the funding required for closure of the second plant, thus putting the potential savings at risk. The Army plans to upgrade the M1 tank in 1992. This upgrade would be only half way through planned production. This does not qualify as stable design.

(2) **M1 Tank Engine.** The Army estimates were based on actual data, but for a different quantity. Contractor estimates were not requested. Savings rates were based on a ratio between historical and projected multiyear contract savings for the tank chassis instead of the engine. Increased weight put excess stress on the recuperator, which led to an increased failure rate. It was projected to be two years until an improvement was tested and produced.

(3) **M1 Tank Fire Control System Thermal Imaging System.** The Army did not get detailed contractor estimates. They only utilized an overall contractor estimate of the relationship between annual and MYP costs to generate the savings rate.

e. Bradley Fighting Vehicle

This program was submitted as two programs, integration and TOW-2. Both of these programs met all criteria.

f. Palletized Load System (PLS)

The analysis indicated savings realism and requirement, funding and design stability, all did not clearly meet the legislated criteria. The PLS did not have any production history. Cost estimates were based on a similarly designed truck known as the Heavy Expanded Mobility Tactical Truck (HEMTT). Funding was not stable because the program was only in the Research and Development phase, thus production funding had not yet been appropriated. Although the PLS used non-developmental item (NDI) components, the integration of these items was still risky. Legislation required a contract to be awarded by December 1989, but the Army requested an extension until after testing was completed.

g. F/A 18 Hornet

The analysis indicated stability of requirement and funding did not clearly meet the legislated criteria. Navy and the House Armed Services Committee projected a possible surplus of F/A 18s in the middle 1990s. Budget constraints have forced the Navy to reduce future production quantities.

h. E-2C Hawkeye

The analysis indicated stability of requirement and design as not clearly meeting the legislated criteria. A June 1989 Congressional Research Service study projected a surplus of E-2C aircraft by the middle 1990s. The Navy projects the surplus from 1992-1994. Recent Group I and II upgrades have not yet been tested. The final integration of the extremely technical avionics of the E-2C was perceived to be uncertain. Wing fatigue problems of the current design are still undergoing testing. (Ref. 111: pp.9-23)

**4. Procurement: Assessment of DOD's Multiyear Contract Candidates for
Fiscal Year 1991, August 1990**

This report was an assessment of six MYP candidates, which DOD had submitted within the Fiscal Year 1991 President's Budget, to determine whether they meet the legislated criteria for MYP.

Table 3.C.3

| System | DOD Est. MYP Savings Percent | Realism of Savings | Requirement Stability | Funding Stability | Design Stability |
|------------|------------------------------------|-----------------------|--------------------------|----------------------|---------------------|
| Black Hawk | 12.4 | ? | ? | ? | |
| FMTV | 12.9 | ? | | | ? |
| Avenger | 9.3 | ? | | ? | ? |
| LHD | 7.6 | ? | ? | ? | |
| LCAC | 7.7 | | ? | | |
| GPS | 19.8 | | ? | | ? |

Table Code: "?" signifies same meaning as in Table 3.C.1.

The following will be a brief summary of the most significant parts of GAO's analyses of the MYP candidates that are summarized in Table 3.C.3:

a. UH-60 Black Hawk Helicopter

The GAO found that the savings realism, requirement stability and funding stability did not clearly satisfy the legislative requirements. Annual and multiyear cost estimates were based on the assumption that the relationship between multiyear and annual contract costs which existed in 1984, existed at the current time, which was six years later. "No data was available to support the \$136 million savings in materials the Army attributed to the multiyear contract." The Army had not asked for new proposals. The stability of funding and requirement were very closely linked. The proposed contract was for 300 aircraft. The procurement objective was 2,253 aircraft. The Army was currently developing an Army Aviation

Modernization Plan to reflect drawing down personnel and aircraft numbers. The Program Executive Officer (PEO) stated that "the service cannot rationally review the procurement objective until its modernization plan was revised because the size and needs of the force structure will determine the size of all Army aviation programs." The Army's Deputy Assistant Secretary for Research, Development, and Acquisition said the procurement objective would be reduced by as much as 632 aircraft. The Secretary of Defense said the UH-60 program may be terminated altogether. Taken together, this does not present a picture of a stable requirement. The Army did not request UH-60 funding beyond fiscal year 1992, while the MYP duration was proposed from fiscal year 1992 to 1996.

b. Family of Medium Tactical Vehicles (FMTV)

The report found that the savings realism and design stability did not clearly satisfy the legislative criteria. Price history does not exist for this program. The Army based its estimates on past similar four-wheeled truck programs and adjusted for configuration differences and inflation. Contractors proposals were due to be received in October 1990. The FMTV had not yet been produced. Despite this shortfall, the Army felt the design risk was low because the FMTV was essentially a commercial item, manufacturing processes existed and because each model would be prototyped. On the contrary, GAO believed that the design was not stable because of the uncertainty pertaining to component integration.

c. Avenger Weapon System

GAO found that the savings realism, funding stability, and design stability did not clearly satisfy the legislated criteria. The cost estimates submitted in the justification package were based on outdated 1988 data. The contractor, Boeing, and the program office stated that the estimates were too low. In July 1990, Boeing proposed a not-to-exceed price that was twelve percent higher than the justification price, but claimed that their price would fall as

prices came in from their subcontractors. This revised data were not submitted to Congress. In light of the increasing prices, DOD would not be able to fund the desired quantities with budgeted funds. The design of the Avenger as a stand-alone system, commonly known as the stinger missile system, was proven. The problem was that one of the essential performance criteria of the Avenger Weapon System was the integration with the Forward Area Air Defense System (FAADS). Other elements of FAADS are not projected to be ready for fielding until as late as 1998 which was long after the contract award date.

d. LHD Amphibious ships

GAO's assessment concluded that the savings realism, requirement stability and funding stability did not clearly satisfy the legislated requirements. This MYP candidate was to build LHDs 5 through 7. The Navy based its cost estimates on actual data from LHDs 1 through 4. The problem was that the contract had not yet been solicited. There were many variables that were not well defined such as savings, future requirement and future funding, in addition to the determination of which contractor would win the award. The request for proposal was due for release in October of 1990. MYP authority was granted for LHDs 2 through 4. When the firm cost data were finally available, the MYP savings did not materialize, thus annual contracts were used. The Naval Sea Systems Command (NAVSEA) stated the Navy's requirement was for ten LHDs. GAO said NAVSEA's reference, the Department of the Navy Long Term Amphibious Lift Requirement and Optimum Ship Mix Study of 1983, was out of date. A new amphibious ship manpower and assets study, which was then in the hands of the Secretary of Defense (SECDEF), defined the LHD requirement as between seven and nine ships. A 1989 Congressional Budget Office (CBO) study reported several alternatives to continuing with the production of the LHD class ships. GAO could not determine if LHDs 6 and 7 were included in

the 1992 Program Objective Memorandum (POM). DOD officials did not comment on this incongruity of funding plans.

e. Landing Craft, Air Cushion (LCAC) Boats

GAO's assessment concluded that the LCAC's requirement stability did not clearly satisfy the legislated criteria. The Navy's claim was that the current LCAC requirement was for a quantity of 107, but GAO points out it was based on the outdated seven year old amphibious lift study from 1983. The update to this study was currently with the SECDEF, but had not yet been released. GAO believed that the requirement for LCAC was proportional to the number of well-deck ships (LHDs, LHAs, LPDs) and the size of the Marine Corps. Based on that relation, the seven-year-old requirement would no longer be valid.

f. NAVSTAR Global Positioning System (GPS) Block IIR Replenishment

Satellites

The GAO report concluded that the requirement and design stability did not clearly satisfy the legislated criteria. GAO felt that the Air Force was being too conservative in their estimates for existing satellite life span. The Air Force justified that they would rather keep a few satellites in storage, than run out of the long lead time system. General Electric had been awarded the development and production contract for this updated satellite. Development would continue during the early phases of production. General Electric had not produced this series of satellites, although they had produced other satellites. A critical design review was scheduled for August 1990. The GPS program office believed that because of the contractor's experience in the satellite business, design risk was low. GAO believed that since development would still be in progress during early stages of production and that some design risk still existed in the Air Force's strategy, that the GPS program did not clearly meet the stable design criteria. (Ref. 109: pp. 2-33)

5. C-17 Aircraft: Comments on Air Force Request for Approval of Multiyear Procurement Authority, March 1996

At the time of this report, McDonnell Douglas had not yet presented their proposal to the Air Force. The MYP request was not proposed in the President's Budget which is the normal procedure. The proposal was to expire on June 1, 1996.

The Air Force's preliminary estimates indicate MYP would save approximately \$896 million over annual production contracts. GAO believed the savings would be much lower at about \$300 million.

GAO perceived several problems in the criteria of design stability. Several unresolved design problems existed which could result in future engineering changes. Furthermore, the Air Force had identified approximately \$1 billion in research and development funding which will be required to develop near term engineering change proposals and \$1.8 billion to implement them. These changes were projected for the 1997 through 2004 timeframe. GAO arrived at the conclusion that the C-17 was 18 months away from achieving all of its required specifications.

GAO also believed the requirement quantity was not stable. The Defense Acquisition Board (DAB) decided to procure 120 C-17s. GAO believed that 100 would satisfy the current strategic mobility requirements.

The report stated that the projected savings rate was on the low side of the spectrum. Typically Congress likes to see a minimum of 10 percent savings rate.

The following were GAO's final conclusions:

Overall, we believe some savings could be achieved from a multiyear procurement of the C-17. However, the savings will likely be less than the current \$896 million estimate and will entail both costs and risks. Given the uncertainty regarding the design stability and the risk associated with increasing production, we believe a further assessment of the merits of a C-17 multiyear program may be warranted and can be accommodated under the current proposal. (Ref. 106.)

6. ARMY ACQUISITION: Javelin Is Not Ready for Multiyear Procurement,

September 1996

This report was an analysis of whether the Javelin weapon system satisfied the legislative criteria for MYP. The GAO believed the most significant reason why the Javelin was not ready for MYP was that the Army has not proven design stability. Tests had not demonstrated that the production items would satisfy performance requirements. Javelin tests conducted at that time demonstrated the need for additional design changes. During 1996 there were several production line stoppages while engineering changes were developed. GAO believed that the javelin's entering MYP before achieving successful test results would greatly increase the risk of cost overruns and schedule delays. This added risk could more than offset savings of MYP. GAO concluded that the Army should award an annual Javelin contract and only consider MYP once the design was stable. (Ref. 105)

7. APACHE LONGBOW HELICOPTER, Fire Control Radar Not Ready for Multiyear Procurement, November 1997

This report was an analysis of issues relating to the Apache longbow helicopter's fire control radar, which had been proposed by the Army and DOD for MYP. GAO found that the statutory requirement of stable design had not been satisfied. Specifically, the radar's transmitter, a critical component, was in progress of being redesigned. The transmitter had development problems, which lead to several delayed progress tests. Army officials projected that operational testing would not occur until December 1998 or early 1999. The Army stated they could utilize the transmitter that was currently being fielded, until the new one passed operational test and evaluation. GAO did not believe this reasoning was sound and consistent with the statutory requirements of design stability. (Ref. 104)

Chapter III has presented the basic data for this thesis. Section B provided the approval record for every MYP request submitted by the DOD from fiscal year 1982 through 1999. It also displayed the DOD's estimates for the estimated TOA savings of each program that was approved and awarded a multiyear contract. Section C provided GAO MYP assessments that will be used as an objective benchmark. Chapter IV analyzes the data presented in this chapter to answer the questions proposed in Chapter I. This analysis will include comparing the approval record against the objective benchmark of the GAO reports. It will evaluate the cancellation risk associated with MYPs. It will also analyze how MYP legislation has evolved in an acquisition reform environment and if the MYP record has provided the basis for further reforms.

IV. DATA ANALYSIS AND INTERPRETATION

A. INTRODUCTION

This chapter focuses on analyzing key issues associated with the thesis questions. The analysis focuses on the following core issues:

-What are the primary causes for Congress' approval/disapproval decision of DOD MYP requests?

-What has the historical record demonstrated about how much cancellation risk is associated with DOD MYP?

-Has the MYP approval legislation evolved consistently with recent acquisition reform initiatives?

-Does the historical record support the amount of control that Congress exerts over DOD in the MYP approval process?

-What has been the recent Congressional focus on disapproval of MYP requests?

B. PRIMARY CAUSES FOR MYP APPROVAL/DISAPPROVAL

The first group of issues to be analyzed are associated with the Congressional approval/rejection rational for DOD MYP requests. Sub-issues include the primary causes for MYP approval/rejection and whether Congress and DOD have adhered to the stated MYP criteria?

1. Methodology and Selected Data Presentation

The following methodology is used for this analysis: First, the GAO MYP assessments summary charts were matched to their associated Congressional approval or disapproval

decision. GAO assessments were utilized because they are considered to be objective assessments of the suitability of candidates for MYP. Second, the GAO assessments were sorted by Congressional approval or disapproval in Tables 4.B.1 and 4B.2 respectively. Third, each column was summed to determine the fraction and percentage of MYP requests that did not clearly satisfy the legislated criteria. Estimated savings less than ten percent were considered as not meeting the criteria in accordance with the legislation that existed at that time. These data are located on the bottom two rows of Tables 4.B.1 and 4.B.2. Fourth, each row was summed to determine how many criteria did not clearly meet the MYP legislated requirements for each program. This is the right hand column of Tables 4.B.1 and 4.B.2. Fifth, the total columns from step three were summed to determine a factor, which represents how well GAO believed the MYP request met the stated MYP approval criteria. The number specifically represents how many of the MYP criteria were not clearly satisfied per GAO's assessment. This Figure is in the bottom right corner of Tables 4.B.1 and 4.B.2. For this program sum, a larger number represents failing to clearly meet more criteria and thus being a weaker candidate than a proposal with a lower program sum. Contrarily, a smaller program sum represents meeting a larger number of stated MYP criteria and therefore being a relatively stronger MYP candidate.

The specific MYP requests that are analyzed are the GAO MYP assessments, which were presented in Chapter III, section C. The GAO recommendations are compared to the Congressional approval/disapproval decisions that were also provided in Chapter III, section B. Tables 4.B.1 and 4.B.2 present summaries of the approved and the disapproved MYP requests and the associated specific GAO criteria assessments. Table 4.B.3 provides the comparative average data for the criteria between the approved and disapproved programs.

MYP Requests Approved with GAO Reports in the Same Year

| System | Fiscal Year | Est. MYP Savings | Realism of Savings | Requirement Stability | Funding Stability | Design Stability | Fraction of Criteria Not Clearly Meeting Requirements |
|---|-------------|------------------|--------------------|-----------------------|-------------------|------------------|---|
| F-16 Aircraft | 1982 | 7.7 % | Not in report | Not in report | Not in report | Not in report | 1/5 |
| CH-47 D | 1989 | 13.2 % | ? | ? | ? | ? | 2/5 |
| H-60 Engine | 1989 | 12.2 % | ? | ? | ? | ? | 2/5 |
| MLRS | 1989 | 11.4 % | ? | ? | ? | ? | 1/5 |
| AV-8B | 1989 | 11.9 % | ? | ? | ? | ? | 2/5 |
| UHF Satellite | 1989 | 11.5 % | ? | ? | ? | ? | 2/5 |
| DMSP | 1989 | 18.1 % | ? | ? | ? | ? | 1/5 |
| F-16 Aircraft | 1989 | 5.7 % | ? | ? | ? | ? | 3/5 |
| Maverick | 1990 | 12.3 % | ? | ? | ? | ? | 2/5 |
| M1 Tank | 1990 | 10.9 % | ? | ? | ? | ? | 2/5 |
| Bradley | 1990 | 12.5 % | ? | ? | ? | ? | 0/5 |
| PLS | 1990 | 12.7 % | ? | ? | ? | ? | 4/5 |
| FMTV | 1991 | 12.9 % | ? | ? | ? | ? | 2/5 |
| Avenger | 1991 | 9.3 % | ? | ? | ? | ? | 3/5 |
| LHD | 1991 | 7.6 % | ? | ? | ? | ? | 4/5 |
| LCAC | 1991 | 7.7 % | ? | ? | ? | ? | 2/5 |
| GPS | 1991 | 19.8 % | ? | ? | ? | ? | 2/5 |
| C-17 Aircraft | 1996 | 5.2% | ? | ? | ? | ? | 4/5 |
| Fraction of requests with questions in this criterion | | 6/18 | 12/18 | 9/18 | 6/18 | 6/18 | 39/18 programs |
| Decimal Equivalent | | .33 | .66 | .5 | .33 | .33 | 2.17 |

Table 4.B.1

“?” annotates criteria that do not clearly meet the legislated requirements.

MYP Requests Not Approved with GAO Reports in the Same Year

| System | Fiscal Year | Est. MYP Savings | Realism of Savings | Requirement Stability | Funding Stability | Design Stability | Fraction of Criteria Not Clearly Meeting Requirements |
|--|-------------|------------------|--------------------|-----------------------|-------------------|------------------|---|
| KC-135 Re-engine | 1990 | 13.0 % | ? | | | | 1/5 |
| Combined Effect Munition | 1990 | 10.0 % | ? | | | | 1/5 |
| F/A 18 Hornet Aircraft | 1990 | 5.5 % | | ? | ? | | |
| E-2C Hawkeye Aircraft | 1990 | 13.6 % | : | ? | | ? | |
| UH-60 Blackhawk | 1991 | 12.4% | ? | ? | ? | | |
| Fraction of requests with questions in this criteria | | 1/5 | 3/5 | 3/5 | 2/5 | 1/5 | 10/5 |
| Decimal Equivalent | | .2 | .6 | .6 | .2 | .2 | 2.0 |

Table 4.B.2

Note: The Apache Longbow radar and the Javelin are not analyzed because the Congressional decision was not made in the same year as the GAO report. The situation may have changed from the GAO report until the decision was made. Any conclusions from these data would be inconclusive.

Comparison of Summaries of Approved and Disapproved MYP Requests by Criteria Per Request

| | Average Estimated MYP Savings Criterion Not Clearly Meeting Requirements | Average Realism of Savings Criterion Not Clearly Meeting Requirements | Average Requirement Stability Criterion Not Clearly Meeting Requirements | Average Funding Stability Criterion Not Clearly Meeting Requirements | Average Design Stability Criterion Not Clearly Meeting Requirements | Average Total Number of Criteria Not Clearly Meeting Requirements |
|------------------|--|---|--|--|---|---|
| Approved MYPs | .33 | .67 | .5 | .33 | .33 | 2.16 |
| Disapproved MYPs | .2 | .6 | .6 | .2 | .2 | 2.0 |

Table 4.B.3

This table represents the proportion of approved or disapproved MYP requests that did not clearly meet the legislated criteria for MYP.

2. Do All Approved Programs Meet Legislated Criteria?

The first issue to be considered is whether Congress only approves MYP requests that clearly meet the legal criteria. The data in Table 4.B.1 demonstrate that this is clearly not the case. The PLS, LHD amphibious ship and C-17 aircraft each have four of five criteria that do not clearly meet the legislated criteria. Additionally, the F-16 aircraft has three of five criteria that do not clearly meet the MYP criteria.

The PLS MYP request was deficient in four criteria. The program was only in the Research and Development phase. This point in the PLS life cycle is too early to apply for MYP. The program has not had the opportunity to attain funding, design, or requirement stability. Cost estimates could not be attained for the MYP because the program was not ready to begin production. Historically, trucks have been one of the traditional mainstays of DOD MYP. The researcher believes the PLS would eventually evolve into a good MYP candidate, but it was requested and approved too early in its life cycle. Since the Army was directed via legislation to enter into a multiyear contract by Congress, the researcher assumes there must have been some reason besides the standard criteria for the PLS to enter MYP.

The LHD amphibious ship program was requested for MYP in fiscal Year 1991. The GAO assessment from Chapter III stated that the request did not clearly satisfy four of the legislated criteria for MYP. The Navy proposed a savings rate of 7.6 percent, which was well below the legislated minimum rate of 12 percent. Additionally, GAO challenged the realism of these substandard savings because the savings were based on actual figures from annual contracts. The Navy did not have multiyear cost data from the contractor. The Navy estimated both the multiyear and the annual costs to arrive at the estimated savings. The Navy intended to require both multiyear and annual contract proposals from the contractor when the request for

proposal was posted. The future requirement for amphibious ships was in the midst of potential change. GAO felt that this revision of future requirements was fundamental to the recommendation that the requirement was not clearly stable. GAO also believed the funding was not stable because the funding could not be identified in the Navy's fiscal year 1992 POM. It is evident by reviewing successful MYPs historically, shipbuilding contracts with this few production units have not been a program profile that has utilized multiyear procurement. The rationale is that acquiring relatively low quantities of ships does not allow the shipbuilders to take advantage of EOQ buys that represent a majority of the MYP savings. The researcher believes that four of five criteria not meeting legislated requirements, combined with the historical record which does not support ships in low production quantities entering MYP, makes the LHD a poor candidate for MYP. The researcher does not agree with Congress and believes multiyear authority should not have been granted to the LHD amphibious ship program.

In fiscal year 1996, the C-17 aircraft program was proposed to Congress as an out-of-cycle request. Out-of-cycle infers that the request was submitted at a time other than with the President's Budget. In the spring of 1996, the C-17 program was hurried through Congress. The GAO assessment of the C-17 program dated March 28, 1996, stated that four of the criteria for multiyear requirements were not clearly satisfied on the C-17 program request. The design was not stable as demonstrated by the Air Force budgeting funds for implementing numerous near term engineering change proposals. The historical average savings rate for successful MYP programs provided in Table 4.B.1 excluding the C-17 was 10.67 percent. The savings rate that was initially proposed for the C-17 at five percent does not come close to the historical concept of substantial savings. GAO stated that the substandard savings rate was not realistic, that the savings were nearly one third of what the Air Force proposed. The requirement was not totally stable. The DAB authorized acquiring 120 C-17s. GAO believed 100 would satisfy the

requirement. This requirement difference is a minor issue, which can be solved by considering option years for additional quantities. The bottom line for the requirement is that the Air Force will buy a large quantity of C-17s to satisfy the future DOD airlift requirement. Despite this, the factors of cost savings, cost reliability and design stability, combine to present a program that clearly does not meet the legislated intent for MYP authority.

The F-16 aircraft MYP request was deficient in three areas. The F-16 was in the final year of a multiyear contract. The problems were in the areas of cost savings and future requirements. The proposed savings were only 5.7 percent, which was well below the then current criterion of ten percent. The confidence that this figure was a true saving over annual contracts was low because the annual estimates were based on Air Force estimates instead of a contractor proposal. Requirement estimates ranged from quantities of 400 to 630. This great variation in quantity opened the Air Force to potential costly contract modifications as they increase or decrease quantities. The F-16 program should have resolved two issues before applying for MYP authority. First, the Air Force needed to attain estimates from the contractor for annual and multiyear contracts. Second, all stakeholders should have been involved in the requirement process to solidify their requirements. Correction of these two deficient criteria would have changed the ratio to one criterion that did not clearly satisfy the legislated criteria to four criteria that clearly meets the legislated standards. In this case, if only one criterion had not clearly met the requirements compared to the average number of criteria not clearly meeting the requirements of approved awarded MYPs of 2.17 (from Table 4.B.1), the C-17 would have been a far better candidate than the average successful MYP. If these actions were completed, the whole F-16 package would be strong enough to balance out for the deficient savings rate and be worthy of MYP approval.

The MYP legislation provided in Chapter II does not mention tradeoffs, but they do exist. The criteria for savings, savings realism, requirement, funding stability and design stability seem fairly straightforward at first reading. Upon closer examination, it becomes evident that there is a gray area when a program is very close, if not satisfying the criteria. This is where GAO has stated tradeoffs apply. When one criterion is a bit weak, it will need another criterion to be strong enough to balance out for the added risk associated with this gray area. (Ref. 111: p.2) The researcher does not believe that when three or four of the five main criteria are in the gray area, like the examples from the previous section, that there is enough good in the remaining criteria to make the whole program worthy of MYP approval.

The counter to the position that Congress has approved programs that are not worthy of MYP approval is that DOD has submitted MYP requests, which do not meet the criteria. In fact, there are several programs that the DOD has proposed and Congress has not approved, which did not meet the criteria. The Carlucci push for increased MYPs in fiscal year 1990 is an excellent example of this. The blame for MYP approval of programs that are not qualified should fall first on the DOD. It is the DOD, which must first request authorization for a program to enter into MYP.

Upon reviewing the PLS, LHD, C-17 and the F-16 examples described above, it is clear that there have been cases when Congress, as well as the DOD have deviated from the legislated MYP criteria. This is not to say that the Congressional approval decision was a bad one, for there are other reasons including industrial base, economic revival and program stability concerns which may have taken precedence. MYP may have been the mechanism utilized to attempt to achieve these goals. Congress must have believed that the benefits of MYP in these situations were greater than the risks associated with approving weaker requests.

3. What are the Primary Causes of Approval/Rejection?

The next issue to be analyzed is to determine the primary causes for MYP approval/rejection. Upon review of the data from Tables 4.B.1, 4.B.2 and 4.B.3, it is apparent that the data are not conclusive. Within each MYP criterion, the percentage of programs not clearly meeting the criteria that were approved, compared to the programs that were disapproved, were very similar. Thus, it is inconclusive to come to a determination as to which criteria are most significant to Congress' approval/disapproval decision. In fact, the average of the requests that do not clearly satisfy the criteria for programs that are disapproved (2.0) is lower than for approved MYPs (2.16). This result is counter-intuitive. It demonstrates that based on the GAO assessments, the MYP requests, which were not approved, were rated slightly higher than approved MYP programs. The data conservatively demonstrate that the candidates, which were approved, were not clearly superior to the disapproved candidates and that there may be other reasons than the stated criteria for the approval/disapproval decision rationale.

There were two cases in 1990 that warrant discussion. The KC-135 re-engine program and the Combined Effects Munition (CEM) program only had one criterion each that did not clearly satisfy MYP criteria. That lone criterion was realism of savings. The political and fiscal environments were in great upheaval at that time. The Soviet threat was diminishing and decreased DOD budgets could be foreseen. In an effort to lock in to long term security and stability for their programs, under the guidance of Secretary of Defense Frank Carlucci, DOD submitted an astounding 35 MYP requests that year. A Pentagon official stated that many of these requests were not valid MYP candidates. (Ref. 67) Secretary Carlucci made the following statement supporting additional use of MYP:

You can chase all the hammers and screwdrivers that you want and you'll get some savings there, but it's dwarfed by the amount of waste that is created by the fundamental instability in the process and the hostile

relationship that has grown up between the Defense Department and Congress on one hand and the defense contractors on the other. (Ref. 3)

At the same time, Congress as well as the Services, did not want to lock in too many MYPs due to the uncertain future threat and concern over reducing future budgeting flexibility. As a result, Congress was very strict, particularly on realism of savings rates. (Ref. 114) Under different financial circumstances, both the KC-135 re-engine and the CEM programs probably would have been approved.

It is apparent to the researcher that Congress as well as the DOD, has not strictly adhered to the legislated MYP approval criteria. Four of the 18 programs that were analyzed and approved should not have been approved. Two of the five programs that were analyzed and rejected seemed to be good MYP candidates worthy of approval. The overall ratings of candidates from this analysis that were rejected actually had a slightly higher rating than the candidates that were approved. Furthermore, there is not conclusive data that any criteria are more important to candidate approval or disapproval. This leads the researcher to believe that there are other reasons, outside of the stated criteria that are influential on the Congressional MYP approval decision.

C. MULTIYEAR PROCUREMENT CANCELLATION RISK

It is commonly known that one of the primary deterrents to increased use of MYP is fear of the risk of contract termination and being forced to pay cancellation charges. The point of this analysis is to evaluate this cancellation risk. This analysis focuses on identifying which MYP contracts have been terminated and what, if any, cancellation charges were paid. These charges are then compared to the estimated financial benefits of the MYPs that have been carried out to

completion during this same period to determine the relative financial risk associated with MYP contract termination.

There were three MYPs that were terminated between fiscal years 1982 and 1998. The first was the termination of the MK-46 torpedo program. This MYP was terminated one year early due to commencement of production for the follow-on MK-50 torpedo. There were not any cancellation charges, but the full projected savings of the MYP were probably not achieved. The second was the termination of the Hawk Missile program. This termination resulted in cancellation charges of \$13 million. The third termination was the Family of Medium Tactical Vehicles (FMTV) program. In this case, the last year of a five-year contract was not funded at the total quantity. There were not any cancellation charges associated with this termination. In summary, there were three terminations over 18 years with a grand total of \$13 million in cancellation charges. (Refs. 109: p. 4 and 9)

The total estimated TOA MYP savings that were identified in Table 3.B.1 were \$11.45 billion. From a purely financial perspective, comparing the total estimated benefit of the MYPs of \$11.45 billion to the total cost of cancellation charges of \$13 million, yields a total estimated benefit that is approximately 881 times the total costs. This tremendous disparity between the financial benefits and costs of MYP makes it apparent that the cancellation charge risk is minimal under the current DOD and Congress relationship. The scrutiny by both Congress and DOD led to a nearly perfect record of entering MYPs that were not canceled.

D. MULTIYEAR PROCUREMENT LEGISLATION IN AN ACQUISITION REFORM ENVIRONMENT

This section focuses on analyzing whether Congress has altered MYP legislation consistently with recent acquisition reform initiatives. The background of acquisition reform was presented in Chapter II. The following table represents the significant Congressional MYP reporting requirements, and how they have changed, from fiscal years 1989 through 1999. Upon review of Table 4.D.1, it is apparent that there have only been two significant modifications to DOD MYP Congressional requirements.

The first change in legislation is the evolution of the savings requirement rates for MYP versus a series of annual contracts. The Fiscal Year 1989 National Security Authorization Act legislated that the savings requirement for MYPs would be ten percent compared to the cost of current negotiated contracts adjusted for changes in quantity and inflation or twelve percent savings, compared to annual contracts if no recent experience exists. The Fiscal Year 1990 National Security Authorization Act reduced the savings requirement from twelve to ten percent for contracts, which did not have recent data. The Fiscal Year 1991 Authorization Act replaced the numeric savings requirement with the adjective description of "substantial" savings.

Although these acts of legislation all occurred before acquisition reform was in full swing in the middle 1990s, this is an excellent example of the early stages of true acquisition reform. The change of twelve percent to ten percent to "substantial" represents Congress giving DOD increased flexibility to make the wise business decision by requesting MYP when the situation was appropriate. The reasoning was that there were certain large programs, which could not reach the ten and twelve percent savings rates, but due to their tremendous dollar

DOD Multiyear Procurement Congressional Reporting Requirements for Fiscal Years 1989 - 1999

| | FY 1989 | FY 1990 | FY 1991- FY 1993 | FY 1994 - FY 1997 | FY 1998 - FY 1999 |
|---|---|-----------|---------------------|-------------------|---|
| Cancellation Ceiling Requirements | Cancellation Ceiling > \$100M, written notification 30 days prior to contract award | No Change | No Change | No Change | No Change |
| Full funding and minimum economic production rate certification | OSD must certify to Congress full funding and minimum economic production rates for Authorized MYPs | No Change | No Change | No Change | No Change MYPs |
| Contract value approval requirements | >\$500M contract value requires only Appropriation | No Change | No Change | No Change | >\$500M contract value specifically requires Appropriation and "other than Appropriation" |
| EOQ, Unfunded Contingent liability, adv procurement requirements | >20M EOQ procurement, unfunded contingent liability or advance procurement leading to MYP requires Congressional notification 30 days prior to contract award | No Change | No Change | No Change | No Change |
| Termination requirements | DOD may not terminate a MYP without notification to Congress 10 days prior. | No Change | No Change | No Change | No Change |

Table 4.D.1

**DOD Multiyear Procurement
Congressional Reporting Requirement Highlights for Fiscal Years 1989 - 1999 (Continued)**

| | FY 1989 | FY 1990 | FY 1991-FY 1993 | FY 1994 - FY 1997 | FY 1998 - FY 1999 |
|---|---|---|---|-------------------|-------------------|
| Saving Requirements Compared to Annual Procurement | 10 % compared to cost of current negotiated contracts adjusted for changes in quantity and inflation or 12 % savings compared to annual contracts if no recent experience exists. | 10 % compared to cost of current negotiated contracts adjusted for changes in quantity and inflation or 10 % savings compared to annual contracts if no recent experience exists. | Substantial Savings of the total anticipated costs of carrying out the program through annual contracts. | No Change | No Change |

Table 4.D.1 (Cont.)

(Refs. 29-41, 82-92, 112: 2306(h) and 112: 2306)

value, the actual dollar savings were quite large and therefore worthwhile of consideration for MYP.

The question arises as to how are "substantial" savings defined. The answer is, it depends on several factors. The criterion was for twelve percent, then ten percent and then substantial savings. The impression is that Congress still wants a minimum ten percent savings, unless there are strong reasons in the other criteria or in some factor outside of the legislated criteria. (Ref. 67) Again, the C-17 is an excellent example. Congress specifically legislated that the C-17 MYP must achieve greater than five percent savings. (Ref. 52) Defense appropriation subcommittee chairman Representative Bill Young (R-Florida) stated that the subcommittee approved the bill contingent upon achieving savings of greater than five percent. (Ref. 2) He also stated he would like to get it up to about seven and one half percent. (Ref. 23) A factor which could balance out for this low saving rate was that it was projected this contract would bring more than 18,000 jobs to the State of California. (Ref. 26) Additionally, 1996 was a Presidential election year and the State of California had 54 electoral votes, the greatest number of any state. (Ref. 74) The voting populace of California would undoubtedly see the President in better standing if this contract were approved. There is also the factor that due to the immense size of the contract, even though the savings were just greater than five percent, the total savings were initially projected at \$834.8 million and were revised to be \$1.03 billion by utilizing MYP. (Ref. 25) This is a great amount of funding that is worthy of allowing a reduced savings rate. The issue fundamentally boils down to that the word substantial saving allows Congress and DOD to use good business sense, to apply tradeoffs to the MYP process and to use MYPs when it seems best for the Country.

The second significant change to MYP legislation is the codifying of the requirement for the MYP request to be legislated in an Appropriation Act and an "other than an Appropriations

Act". (Ref. 91) Since this legislation was part of the National Defense Authorization Act of 1998, it is assumed that this statement infers that the MYP must also come from an Authorization Act. This legislation and the associated inference may seem to be a redundant statement of the basic relationship between the Congressional Authorization and Appropriation Committees, but actually it is not. It is reinforcing the relationship between the Appropriators and the Authorizers. It is usually not legislated that a program must be authorized before it is appropriated, but this has been a Congressional rule. (Ref. 1) For some areas it has been made into statute that a program must first be authorized, before it can be appropriated. Now MYP falls in this category. It has been speculated within DOD that the reason for this legislation change was due to the C-17 Aircraft program. The C-17 was appropriated to enter MYP by the Fiscal Year 1996 Supplementary Defense Appropriation Act. The Act stated that the funds appropriated under this Act for the C-17,

...may not be used to execute a multiyear procurement contract until the earlier of (1) May 24, 1996, or (2) the day after the date of the enactment of an Act that contains a provision authorizing the Department of Defense to enter into a multiyear contract for the C-17 aircraft program." (Ref. 52)

This legislation, which was dated April 26, 1996, essentially took a great amount of power away from the Authorizing committees. If the Authorizers passed a bill, then the C-17 MYP would go on. On the other hand, if they did not pass an Authorization bill, the C-17 MYP could legally still go on. It would break a congressional rule, but it would be legal. This made for a very politically sensitive situation for DOD as well as Congress. Being left out of the decision on such a major program was counter to the fundamentals of Congressional checks and balances. (Refs. 1, 67 and 71)

Even though this new legislation is only emphasizing the relationship that is supposed to exist between the Appropriators and the Authorizers, it is counter to the fundamentals of

acquisition reform. One of the principles of acquisition reform is streamlining the acquisition process. The C-17 was a program that was having difficulties throughout the late 1980s and early 1990s. (Ref. 105) Congress and DOD worked together outside the normal MYP request timeframes to utilize MYP as a method of attaining program stability. The bold legislation by the Congressional Appropriators and then all of Congress, used streamlining to move the C-17 MYP request through Congress much faster than the normal procedures. This allowed the Air Force to have the MYP approval process be closely in sync with the acquisition process. It is normally very difficult for the acquisition cycle and the MYP approval process to be ready to enter into MYP at the same time. The acquisition cycle is on a schedule that is changing as milestones are met. The MYP approval process is usually on a rigid schedule that is not easily adjusted to the optimal time when the program is ready for MYP. The C-17 case in 1996 resulted in MYP approval when DOD and Congress both believed the program was ready for MYP. This was very effective and efficient interaction of the MYP approval process and the acquisition cycle.

This is an interesting break from the standard MYP situation. Typically, stability of design, funding and requirement are needed prior to entering MYP. But it can be reasoned that entering MYP will provide stability to the program. This is so because once a program enters into a MYP, due to the threat of cancellation charges, the holders of the purse strings, do not want to alter the MYP program. In the case of an annually funded contract, requirements and funding are scrutinized every year, often leading to program changes and instability. (Ref. 70) As mentioned above, this MYP stability was an effective tool leading the C-17 program to success.

One area of legislation that has been omitted by Congress is the indexing of key numeric values. By not indexing these figures, the inflation of the United States dollar has tightened the

Congressional control over MYP. The specific numbers are the \$100 million cancellation ceiling, the \$500 million contract value and the \$20 million EOQ savings, which are identified in Figure 4.D.1. The consumer price index (CPI) has been utilized in this analysis as the index factor. (Ref. 55: p. 349 and 61) The following table represents what the value of the original Congressional intent would be inflated to in current 1998 dollars.

| Thresholds | Date Initially Legislated | Future Value Calculation Using CPI | Value in September, 1998 |
|------------|---------------------------|------------------------------------|--------------------------|
| \$100 M | Dec 1981 (Ref. 82) | \$100M/90.9 x 163.6 | \$180.0M |
| \$20 M | Dec 1982 (Ref. 30) | \$20/96.5 x 163.6 | \$33.9M |
| \$500 M | Dec 1985 (Ref. 32) | \$500M/107.6 x 163.6 | \$760.2M |

Table 4.D.2

The cancellation ceiling notification requirement, which was initially legislated at \$100 million in 1981, is now equivalent to \$180.0 million in September 1998 dollars. The \$20 million EOQ buy requirement that was initially legislated in 1982 is equivalent to \$33.9 million in 1998 dollars. The \$500 million contract value originally enacted into law in 1985 is now equal to \$760.2 million in 1998 dollars. These data demonstrate that the level of control that Congress wanted to have over the DOD MYP process when they initially legislated these thresholds has increased greatly over the years. This increased Congressional control is caused by inflation of the United States' currency and Congress' not indexing these thresholds to maintain the same level of control. The DOD must now get Congressional approval for thresholds with dollars that are greatly inflated, thus increasing Congressional control over the MYP process.

This omission is clearly contrary to acquisition reform. FASA and Clinger-Cohen were typified by increasing thresholds to give the acquiring organizations additional flexibility to use streamlined procedures.

In summary, it is apparent that there has only been one trend of acquisition reform dealing with MYPs. The action of modifying the required savings rates was taken prior to when

the Clinton Administration and Congress began their full-scale acquisition reform initiatives. The reasoning as to why the Congressional Authorization committees legislated their stronger role of control over the MYP process is logical and sound, although not in accordance with acquisition reform trends. Congress has done very little to reform the MYP approval process throughout the 1990s. This omission coupled with inflation and lack of indexing has led to the increase of Congressional Control over the DOD MYP process.

E. APPROPRIATE AMOUNT OF CONGRESSIONAL CONTROL

The issue analyzed in this section is whether the amount of control that Congress uses over the DOD MYP approval process is appropriate given the historical record. The methodology used to approach this problem is to analyze the approval ratio for fiscal years 1982 through 1999 and to determine whether any trends exist which may indicate that the MYP approval process warrants modification. The MYP approval rate is defined as the number of MYP approvals divided by the number of MYP requests. Table 4.E.1 summarizes the approval data presented in Chapter III and exhibits the approval rates for fiscal years 1982 through 1999. Figure 4.E.1 is a chart of the approval rates from Table 4.E.1 with a linear regression plotted against it. It is evident from this figure that fiscal year 1990 is an outlying data point that is not consistent with the trend of MYP approval rates. This was the year Secretary Carlucci emphasized MYP to try to lock in future stability. Figure 4.E.2 is the same linear regression, which has omitted fiscal year 1990. Figures 4.E.3 and 4.E.4 are the same data as the first two charts, only plotted with a five year moving average trend line.

Figures 4.E.1 through 4.E.4 each exhibit a trend line that is increasing up close to a 100 percent Congressional approval rate for DOD MYP requests. The researcher believes these trend lines demonstrate that DOD and Congress have become increasingly in sync as to interpretation

of the legislated MYP criteria. In the 1980s, there was a combination of two factors working to produce a lower approval rate. First, Congress was not confident that MYPs would yield significant savings that the DOD had advertised. (Ref. 67) Secondly, DOD did not fully understand Congress' thought processes and standards for programs where the approval decision was unclear. In 1990, Secretary of Defense Carlucci launched an initiative of trying to lock as many programs as he could into MYP, qualified or not. This was a one-time deviation from the normal DOD practice. Since 1991, DOD has learned how to request the programs, which will probably gain Congressional approval.

MYP Approval Rate by Fiscal Year

| Fiscal Year | Approved | Requested | Approval Rate |
|--------------------|-----------------|------------------|----------------------|
| 1982 | 8 | 8 | 100% |
| 1983 | 7 | 13 | 54% |
| 1984 | 8 | 18 | 44% |
| 1985 | 9 | 12 | 75% |
| 1986 | 7 | 8 | 88% |
| 1987 | 6 | 8 | 75% |
| 1988 | 3 | 5 | 60% |
| 1989 | 9 | 9 | 100% |
| 1990 | 10 | 35 | 29% |
| 1991 | 6 | 7 | 86% |
| 1992 | 3 | 4 | 75% |
| 1993 | 2 | 2 | 100% |
| 1994 | 1 | 1 | 100% |
| 1996 | 3 | 3 | 100% |
| 1997 | 3 | 3 | 100% |
| 1998 | 8 | 8 | 100% |
| 1999 | 6 | 7 | 86% |
| Totals | 99 | 151 | 66% |

Table 4.E.1

Note: 1995 is omitted because DOD did not request any MYPs.

This increasing trend in the Congressional approval rate leads to one of two conclusions. First, the process is working very well, DOD and Congress are thinking along the same lines and the trends show that existing legislation and the associated level of control are appropriate. The

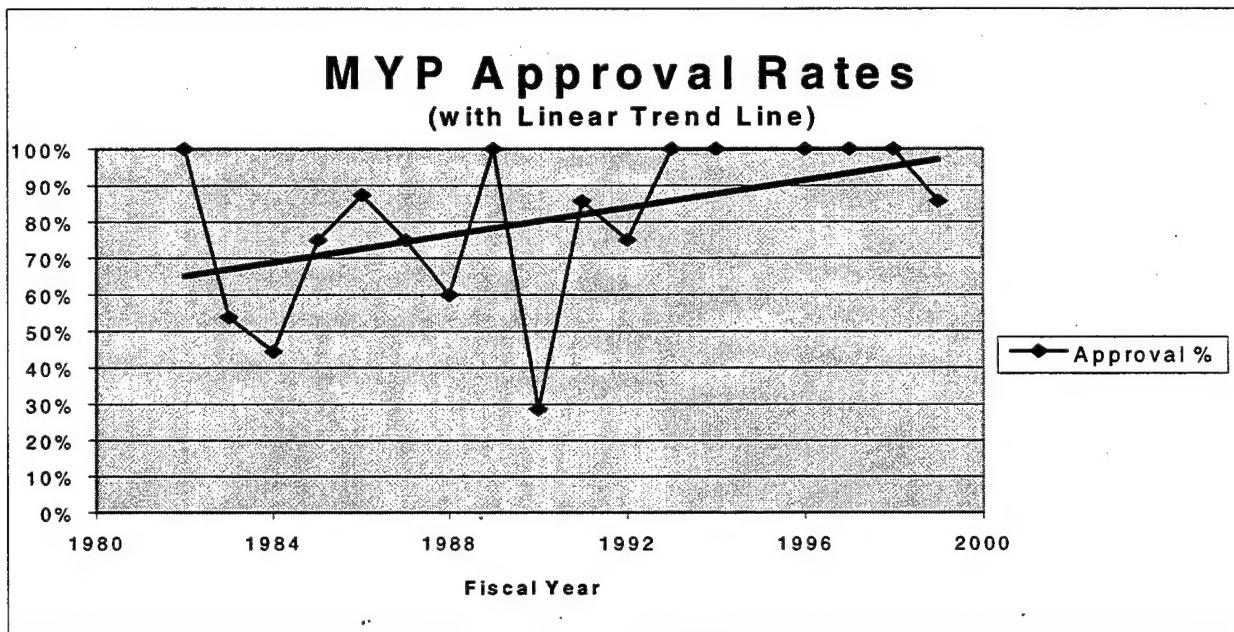


Figure 4.E.1

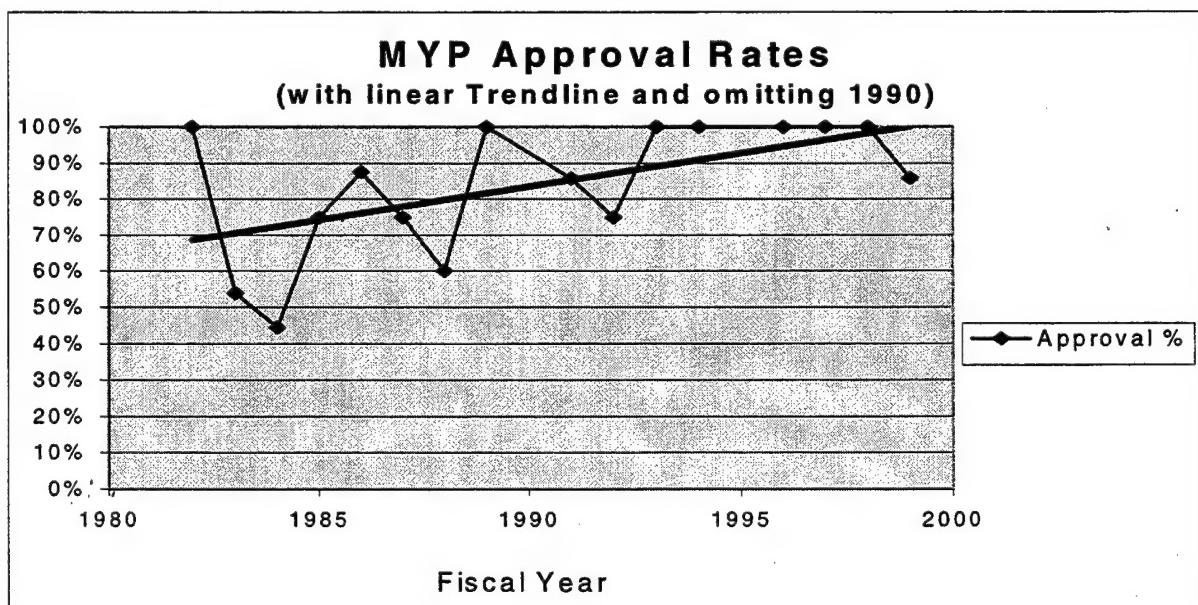


Figure 4.E.2

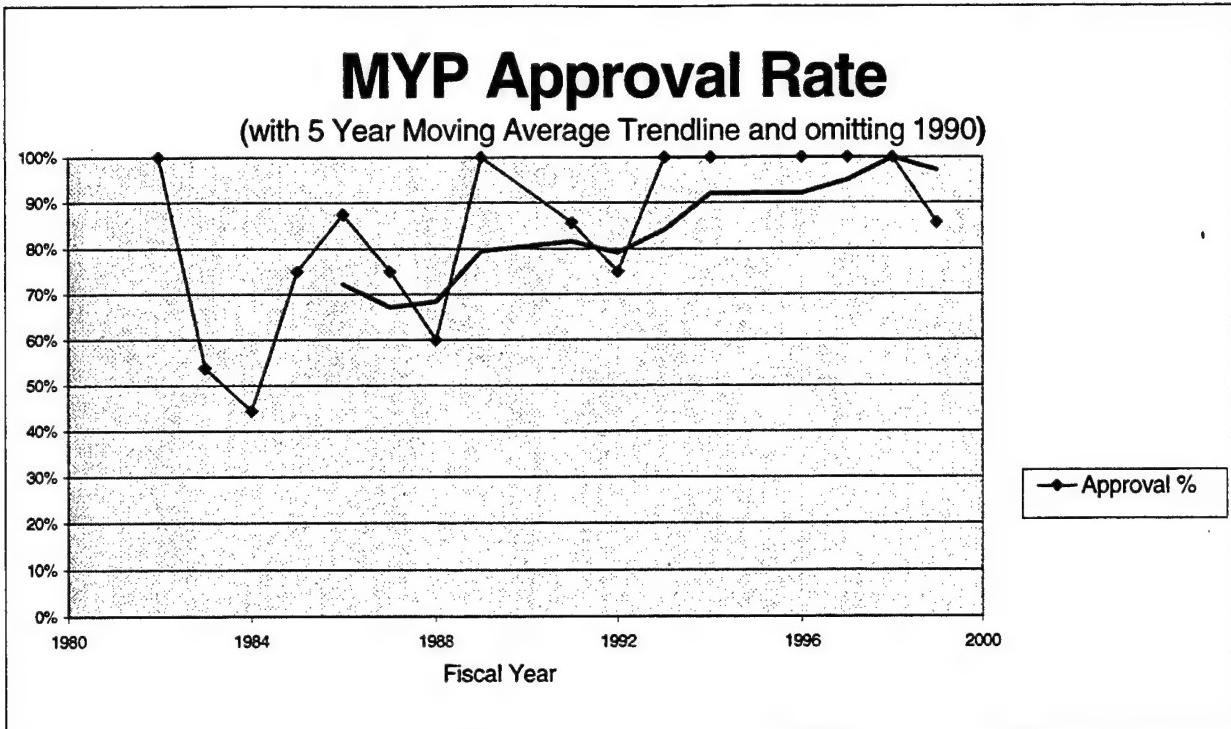


Figure4.E.3

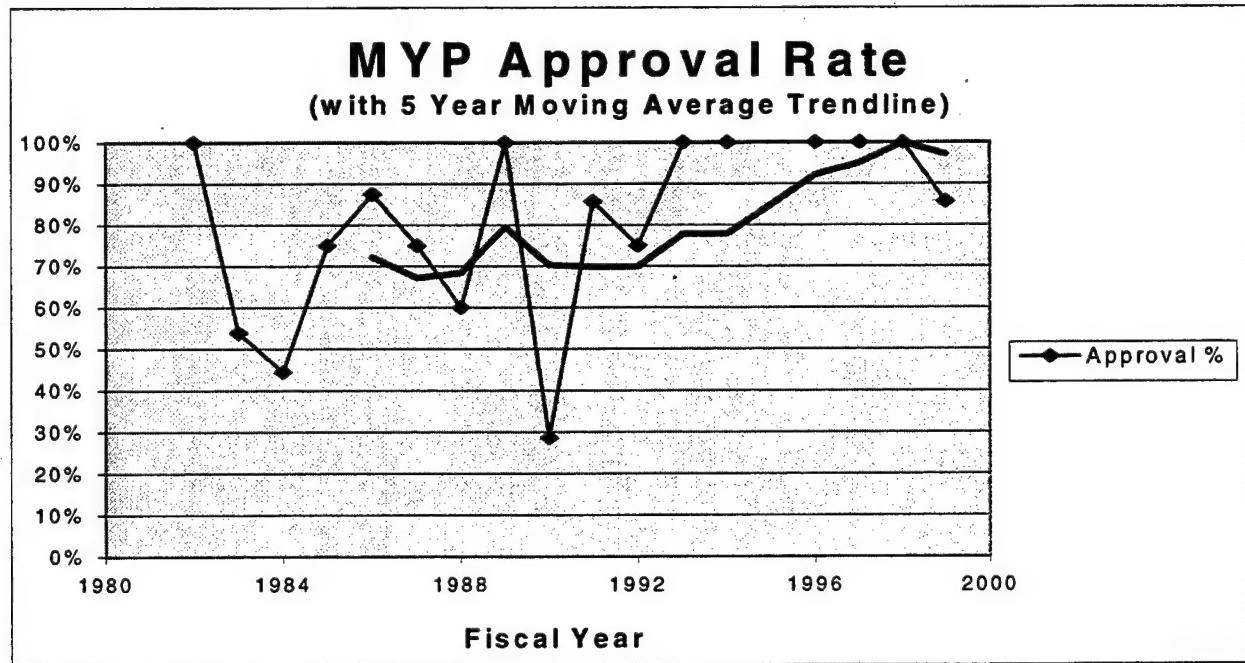


Figure 4.E.4

second conclusion is that the increasing approval rate opens the gate for acquisition reform. Since Congress has approved 23 of the 24 MYP proposals since 1993, the approval requirements of the DOD's submitting MYP requests to Congress is redundant and only adds administrative burden and inefficiency to the MYP process. The reform trends of empowerment and insight, instead of oversight, are consistent with this argument. Congress has legislated the criteria and provided the feedback, while the DOD has learned Congress' standards and processes. Now the DOD is ready to have the administratively burdensome Congressional MYP approval requirements removed, which will empower DOD to use their discretion of when to use MYP. The first point would counter that the DOD would return to the days of the Carlucci initiatives and go overboard on MYPs without Congress playing its oversight role as the "keeper of the purse".

Chapter II described Congress' constitutionally directed role of oversight over the military. Congress has the responsibility to the United States' taxpayers to ensure that the military is operating effectively and efficiently spending the funds that have been appropriated by Congress. The issue is whether Congress will still have control over DOD if they delegate the MYP approval criteria down to the DOD. The answer is yes because Congress still has total control over the funds annually appropriated to the multiyear contract. Congress can direct the DOD to enter or withdraw from MYP via legislative action at any time. Congress still has the power and the authority to control the multiyear situation via its legislative authority. Given the recent trends of Congressional MYP approval rates approaching 100 percent as demonstrated earlier in this section, Congress' involvement in the MYP approval process is not be required and is administratively burdensome. If Congress desires to have the MYP approval process be consistent with acquisition reform trends of the 1990s, they should reduce the Congressional approval requirements.

The recent case of the multiyear small arms programs is a reason for Congress remaining involved in the MYP approval process. The small arms programs were MK19-3 grenade machine guns, M16A2 rifles, M249 Squad Automatic Weapons, and M4 carbine rifles.

In 1995, the DOD Appropriations Act stated that the Army may use multiyear contracts to acquire these small arms. Congress was planting the idea for DOD to purchase these programs with MYPs. DOD did not utilize this opportunity provided by Congress. Congress emphasized its desire, and strengthened its wording in the 1996 National Security Authorization Act by stating that the Army "shall enter into a multiyear procurement contract during fiscal year 1997." (Ref. 86: sec. 115) Later legislation revealed that Congress was directing this MYP for reasons of maintenance of the small arms industrial base. (Ref. 112: title 10, sec. 2473, subsections a-d) Even if Congress delegates the authority for MYP approval to DOD, they must maintain the control to be able to make industrial base and other strategic decisions in the interest of national security.

F. RECENT EXPERIENCE WITH MYP DISAPPROVAL

Fiscal years 1991 through 1999 have been a period characterized by extremely high Congressional approval rates as analyzed earlier. Congress approved 32 of the 35, or 91.4 percent of MYP candidates proposed by DOD since the Carlucci initiative of 1990. The only request not approved during the past seven years was the T-45 Goshawk aircraft program in fiscal year 1999. As this is the only current disapproval it will be analyzed in depth. The allowing section analyzes the T-45's proposal, the feedback provided by Congress and the final decisions legislated by Congress. It then briefly discusses the previous two programs which did not gain Congressional approval, the C-17 Aircraft in fiscal year 1992 and the UH-60 Black

Hawk in fiscal year 1991. subsequent analysis provide insight as to whether Congress has been adhering to the legislated MYP criteria when they have disapproved DOD MYP requests.

1. The T-45 MYP Request

The Navy, DOD and the President proposed the T-45 to Congress for MYP approval within the fiscal year 1999 Presidential budget. Appendices C through F are the MYP exhibits supporting the request. The proposed MYP would acquire 64 total aircraft at a rate of 15 per year for a total cost of \$863.6 million from Boeing (MDA). The following are the highlights of the MYP exhibits:

-Substantial Savings. A savings rate of 5.2 percent for the MYP versus a series of annual contracts was proposed for \$47.4 million total dollar savings.

-Stable Requirement. The Navy plans to use the T-45 through 2035 in order to maintain a viable program for training naval aviators. The increasingly unreliable T-2 aircraft has added additional stability to the T-45 requirement.

-Stable Funding. Funding for the T-45 has been stable since 1992. The Navy and DOD are committed to funding this program. Funding stability risk is assessed as being low.

-Stable Design. The T-45 is currently over half way through its procurement phase. The new cockpit configuration recently competed tests by the Navy's Operational Test and Evaluation Force with satisfactory results. Design stability risk is assessed as being low.

-Degree of Cost Confidence. The 5.2 percent savings rate was developed using Boeing McDonnell Douglas Aircraft's (MDA) inputs and a NAVAIRSYSCOM (AIR-4.2.2) budget model, which is regularly updated with actual cost data and forward price agreement data. Cost confidence risk is considered to be low.

-Degree of Confidence in Contractor Capability. Boeing has adequate plant capacity. They have produced the aircraft already. Discussions have been held with Boeing's management to correct delivery schedule problems which have recently occurred. See appendices C through F for details.

The T-45 program office received feedback from the Senate Armed Services Committee through the Congressional Liaison Office that the 5.2 percent savings rate was too low; however if the savings could be increased to 5.5 percent or higher, the proposal should be approved. The program office then held discussions with Boeing (MDA) management and figured a way to get the savings rate up to 5.5 percent. Boeing was reluctant to make new capital investments that would spur addition savings for several reasons. The T-45 was half way through its production phase. This meant the process was in place and there was not sufficient time remaining to make new capital investment a cost-effective decision. Secondly, Boeing (MDA) is currently in the low rate initial production phase of the F/A-18E/F Super Hornet. They are also one of the two teams competing on the Joint Strike Fighter (JSF). (Ref. 8) These potentially huge contracts would be very influential upon the future profitability of the firm. Thus, Boeing is focusing its efforts on F/A-18 and JSF. Finally, Boeing is going to be awarded the T-45 contracts if the Navy reverts to an annual contract. Combined, these factors do not provide Boeing with great incentive to break from the status quo to facilitate the Navy attaining a higher savings rate and making MYP for the T-45 more attractive. (Ref. 64)

Shortly into fiscal year 1999, the Appropriation and Authorization Bills were published. The Authorization bill approved the T-45 for MYP. (Ref. 92) The Appropriations bill did not approve the T-45 for MYP. (Ref. 41) This was the first MYP not to be approved since the C-17 aircraft in 1992. Historically, Congress does not specifically give reasons for disapproval, but indications can be gained by looking at the signals that Congress provides. Sources of these

signals from Congress include requests for clarification, pointed questions, direction for proposal modification and Congressional hearings. The T-45 MYP request is the next area of analysis.

Upon reviewing Appendices B through E and coupling it with the signals sent by Congress, it is readily apparent the major issue was cost savings or avoidance. The criteria of requirement, funding and design stability were clearly satisfied. The production capability of Boeing (MDA), a firm with vast commercial and DOD experience is definitely low risk. It appears the minor schedule problems have been solved. This leaves the issues of substantial cost saving and the confidence in these savings.

The following methodology was utilized to analyze the cost issue: (1) the approved GAO MYP assessments with their estimated TOA savings rates and totals from Chapter III of this study were gathered. The GAO assessments were chosen because they are a body of assessments in which the data were readily available. It was assumed that the programs upon which Congress tasked GAO to conduct audits was a random sample of all MYP requests. (2) The programs that were approved, but not awarded a multiyear contract were eliminated. These programs were eliminated because they represent programs, which DOD made the final determination that it was not in the best interest of the DOD and national security that MYP be used. This left only good, solid, approved and awarded MYP programs. (3) The total savings were adjusted by the applicable CPI factor to 1998 constant dollars. This allows comparison of savings values across all years. (4) The remaining approved and awarded MYPs were charted comparing their estimated TOA savings rates versus their CPI adjusted estimated total TOA savings. Trend analysis was then performed to determine if there was a good relationship between the plotted data. (5) The same data from the T-45 proposal were then plotted on the chart from step four. (6) The T-45 proposal was then compared to the approved and awarded program's trend line and comparisons were drawn.

Table 4.F.1, which was created by the researcher, summarizes the data from steps one, two and three. Figures 4.F.1 and 4.F.2, created by the researcher, are charts formed by comparing the approved and awarded MYP's estimated TOA savings rates versus their CPI adjusted estimated total TOA savings. Both charts have the same data plotted, only the first displays the exponential regression while the second displays the linear regression. It is evident by observation that the linear and exponential regressions are very similar.

| Program | Fiscal Year | Estimated TOA Savings Rate | Estimated TOA Savings | CPI Adjusted Estimated TOA Savings |
|-------------------|-------------|----------------------------|-----------------------|------------------------------------|
| F-16 Aircraft | 1982 | 7.7% | 256.8 | 466.3 |
| CH-47D Helicopter | 1989 | 13.2% | 118.3 | 163.6 |
| H-60 Re-engine | 1989 | 12.2% | 44.6 | 61.7 |
| MLRS | 1989 | 11.4% | 126.9 | 175.5 |
| AV-8B | 1989 | 11.9% | 165.5 | 228.9 |
| UHF Satellite | 1989 | 11.5% | 194.8 | 269.4 |
| DMSP | 1989 | 18.1% | 99.6 | 137.7 |
| PLS | 1990 | 12.7% | 153.1 | 202.0 |
| FMTV | 1991 | 12.9% | 197.4 | 247.1 |
| Avenger | 1991 | 9.3% | 60.8 | 76.1 |
| GPS | 1991 | 19.8% | 115.3 | 144.3 |
| C-17 Aircraft | 1996 | 5.2% | 834.8 | 898.5 |

Table 4.F.1

The linear and exponential trend line from Figure 4.F.1 and 4.F.2 demonstrate that there is a relationship between the estimated savings rates and total savings that are good MYP candidates and will gain Congressional approval. Historically, Congress has wanted a minimum of ten to twelve percent savings rate as is evident by the cluster of programs on the left side of the charts in the ten to fourteen percent range. Then the term "substantial" was applied to savings. This gave Congress and DOD the flexibility to apply good business sense. The C-17 was an excellent example of this judgment. Even though the savings rate was barely above five percent, the total savings were \$1.03 billion. In this era of fiscal scrutiny, this is a wise business decision that will allow DOD and Congress additional budgeting flexibility to add new

programs, increase funding to existing programs or avoid cutting programs if budget cuts are required. The trend lines demonstrate that as total TOA savings gets larger, Congress will accept a lower savings rate for the program. Above the line represents programs that Congress looked upon very favorably. Below the line are programs that were still approved, but are weaker in this criterion. The proposals below the line may have to be stronger in the other MYP criteria to balance out for being below the savings tradeoff curve. It is logical and a good business practice that this tradeoff relationship exists in today's closely scrutinized fiscal environment.

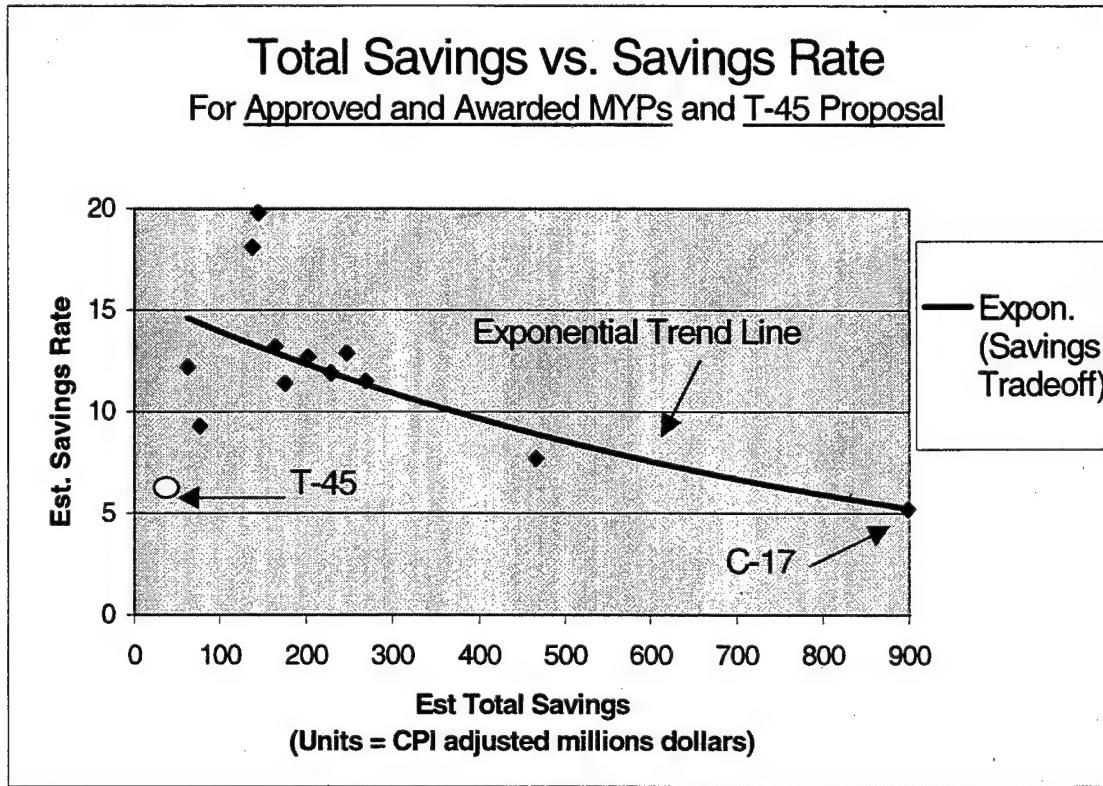


Figure 4.F.1

Total Savings vs. Savings Rate
For Approved and Awarded MYPs and T-45 Proposal

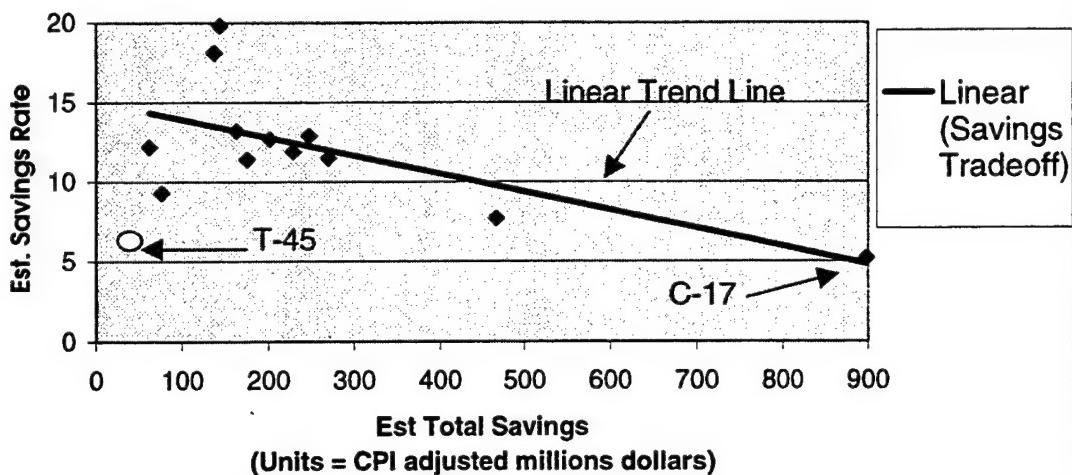


Figure 4.F.2

When comparing the T-45's position on Figures 4.F.1 and 4.F.2 to the tradeoff trend line of approved and awarded MYPs, it reinforces the hypothesis that insufficient cost savings were a reason for the MYP rejection. The T-45's combination of low savings rate and relatively low total savings, do not make it a good candidate for MYP. When plotted on Figure 4.F.1, it falls well below the trend line, making it a less favorable candidate. It is an outlying datum point that does not fit with the approved and awarded MYPs. Additionally, when it is considered that the savings rate had to be worked to get up to 5.5 percent, it lowers the confidence factor that the savings will be achieved. This leads the researcher to believe that given the shortfalls in cost savings, Congress made the correct decision in not approving the T-45 for MYP in fiscal year 1999.

2. Earlier Disapprovals

The next most current MYP requests to be disapproved by Congress prior to the T-45 were the C-17 in fiscal year 1992 and the UH-60 in fiscal year 1991. This section briefly discusses the circumstances surrounding these MYP requests and assesses Congress' decisions for disapproval.

The C-17 Aircraft was first proposed for MYP in fiscal year 1992. It was a program that experienced great turmoil for many years. Several of the MYP criteria were not met by the C-17 program during the MYP review process in 1991. The criterion of design stability was not met. The C-17 was not meeting key performance parameters. Engineering changes were continually being implemented in an effort to improve performance. As a result, every plane produced had a unique configuration. This does not meet the stability requirement for MYP. McDonnell Douglas had overrun the development contract by \$1.1 billion. McDonnell Douglas was making claims that the Air Force had changed the scope of the contract. Air Force Officials had significant concerns whether McDonnell Douglas had the management expertise to perform successfully. These factors culminate in the determination that the realism of cost savings is high risk. (Ref. 76) Considering all the configuration and financial problems that occurred with the C-17 program, the researcher concurs with the Congressional decision that the C-17 program was not ready for MYP in fiscal year 1992.

The UH-60 Black Hawk helicopter was proposed in the Fiscal Year 1991 President's Budget for MYP to begin in fiscal year 1992. The program was then in a MYP that had begun in fiscal year 1988 and was due to end in fiscal year 1991. During the Congressional review of the MYP request, the Army submitted their Program Objective Memorandum (POM), which did not include funding for the UH-60 program after the current multiyear contract expired at the end of

fiscal year 1991. This action by the Army clearly demonstrated that they did not have stable funding for the length of the proposed MYP. (Ref. 75) This complete failure to satisfy the criterion of stable funding of the UH-60 program was ample reason for Congress to disapprove this MYP request. This is a situation where having one of the criteria so decisively not satisfying the legislated criteria, it is not possible for the other criteria to be strong enough to balance out for the deficiency. Therefore, the researcher agrees with Congress that the UH-60 did not warrant MYP approval at that time.

This analysis of the last three disapproved MYP requests indicates that Congress had valid reasons to disapprove those programs and had acted within the legislated bounds of the MYP criteria.

G. SUMMARY

Chapter four has analyzed the principle issues of this thesis. From these analyses it is apparent that the Congressional MYP approval process is not a black and white process, but a process which considers many legislated and non-legislated factors in making the final decision. The rationale for these decisions is not explicitly published, but hypotheses about the reasons for specific programs approval or disapproval can be formed based upon the signals provided by Congress and by comparison to past MYP approvals. MYP legislation has made slight changes during the 1990s that allow the DOD increased use of judgement when considering MYP, but increased empowerment of DOD is still required. The analysis demonstrates that Congress and the DOD were in sync on which recent programs should enter multiyear contracts. Analysis demonstrated that cancellation risk is not as high as it had been perceived. These factors culminate in fostering an environment that is open to new MYP acquisition reforms, which will loosen the control Congress holds over the DOD MYP process and make the process

increasingly effective and efficient. Chapter V answers the thesis questions, provides final conclusions and offers recommendations for improving the MYP acquisition process.

V. CONCLUSIONS AND RECOMMENDATIONS

A. INTRODUCTION

The overall purpose of this thesis is to examine the relationship that exists between the Department of Defense (DOD) and Congress regarding multiyear procurement (MYP) and to determine if this relationship has changed, consistent with acquisition reform initiatives. This chapter presents conclusions based upon the research, provides recommendations for improvement of the MYP process, answers the thesis questions and provides potential areas for future research.

B. CONCLUSIONS

1. Multiyear contract cancellation risk is not as high as it is generally perceived.

Cancellation risk is perceived to be one of the primary deterrents to MYP. Chapter IV, Section C, conducts analysis comparing the total cancellations fees paid by the DOD from 1982 through 1998 and the total estimated dollar savings of all MYPs that were awarded during that same time period. The data demonstrate that the total savings of utilizing MYP versus a series of annual contracts were \$1.54 billion. Only three MYPs have been canceled after award during this period. The total cancellation fees paid were \$13 million. Thus, the financial benefits of \$1.54 billion are 887 times the financial costs of \$13 million. This relationship leads the researcher to conclude that the financial risk associated with cancellation fees is very low under the current process.

2. MYP legislation has not fully evolved consistent with acquisition reform initiatives of the 1990s.

The Federal Acquisition Streamlining Act of 1994 (FASA) and the Clinger/Cohen Act of 1996 had a tremendous impact in changing the acquisition procedures within the DOD and all of Government. Highlights of FASA and Clinger/Cohen include streamlining, empowerment, increased discretion to make smart business decisions, increased thresholds, increased efficiency, commercial practices, commercial pricing and reduced reliance on military specifications. These reforms essentially seek to streamline and make the acquisition process more efficient.

There has only been one area of MYP legislation, which has changed consistently with acquisition reform initiatives of the 1990s. This change was the MYP criteria of savings requirements for MYP as compared to a series of annual contracts. The legislation in fiscal year 1989 required ten percent savings as compared to current negotiated contracts or twelve percent savings if no recent contract experience exists. Fiscal year 1991's legislation changed the requirement to ten percent savings as compared to current negotiated contracts or ten percent savings if no recent experience exists. In fiscal year 1993 the legislation was changed to read "substantial savings" and has remained intact through the present (1998). This change from 10/12 to 10/10 percent to substantial savings is an excellent example of acquisition reform. It represents Congress giving the DOD additional flexibility when considering a candidate for MYP. It allows the DOD to consider using MYP in situations where the savings might not meet the old ten or twelve percent requirements, but the other MYP criteria are so strong, they balance out for the slight decrease in cost savings. Additionally, very large programs like the C-17 may only save five percent, but that five percent equates to a savings of approximately one billion dollars. This sum represents a tremendous amount of savings and a smart business decision, which is worthwhile for consideration for MYP.

During the period of fiscal years 1993 through 1999, Congress approved 23 of 24 MYPs requested by the DOD. This demonstrates that the DOD is now submitting MYP candidates that

gain Congressional approval approximately 95 percent of the time. This high approval rate also leads to the conclusion that the current MYP procedures include reporting requirements that are redundant. Congressional reporting requirements do not add substantial value to the MYP process and therefore should be loosened to make the process more efficient. Methods for empowerment and adding discretion to the DOD are discussed in Section C below.

3. Congressional rationale for MYP approval/rejection decision is not clear.

Congress does not explicitly state why specific MYP requests are approved or rejected. Often Congress does send signals to DOD in the form of questions or recommendations for needed improvement. These signals are not concrete legislation, but indications of the intent of some individuals or groups in Congress. Reading these signals is not a precise science but can be utilized to gain an understanding of why a specific MYP may have been rejected.

Contrary to the Congressional signals about the programs, the approval and rejection record is legislated and concrete. Analysis of the legislated criteria of approved and disapproved programs can give an indication as to what rationale Congress applied to the MYP approval/rejection decision. General Accounting Office (GAO) reports that evaluated MYP candidates are used as unbiased assessments of the required criteria. Twenty-three assessments were located. They were separated into approved and disapproved categories. The approved and disapproved categories were then tabulated and averaged for each of the five required criteria.

There were four purposes of this GAO analysis that was conducted in Chapter IV, Section B. The first purpose is to determine which criterion, if any, was the most influential in effecting the Congressional approval/disapproval decision. The results were inconclusive. There was not a significant difference in any criterion comparing the approved and the disapproved categories. This analysis leads the researcher to the conclusion that success or failure in any

criteria is not significant in determining if a MYP request will gain Congressional approval or disapproval.

The second purpose of this analysis is to determine if there is a difference between the averages of how many criteria GAO had questions with on the approved versus the disapproved MYP requests. The analysis indicated that on average the five programs that were disapproved were slightly better candidates than the eighteen candidates that were approved. This leads the researcher to conclude that there must be other factors that are at least as significant as the legislated program criteria in the MYP approval/disapproval decision-making criteria.

The third purpose is to look for programs that were approved which should not have been approved. There were three programs of which GAO had questions with four out of the five legislated MYP criteria. Chapter IV, Section B, Sub-section 2 analyzed each of these programs in depth. It is clear from the analysis that these three programs did not satisfy the legislated intent for MYPs and should not have been approved.

The fourth purpose is to look for programs that should have been approved, but were not. There were only two requests that were close to fitting in this category. They both only had GAO questions in one criterion, and that was cost savings. These two cases occurred in 1990, an especially turbulent fiscal period. Given the fiscal turmoil that existed at that time, the researcher concludes that the rejection decision was a fair one.

The final analysis from this section is on the last three MYP requests that Congress has rejected. The analysis was based on interviews with program office personnel and literature reviews. The T-45 in fiscal year 1999 had inadequate savings. The C-17 in fiscal year 1992 had significant cost and design problems. The UH-60, which was proposed in fiscal year 1991, was not funded in the Army's Program Objective Memorandum (POM). This lack of funding was the driving factor that led to the UH-60's MYP rejection. Each of these analyses leads the researcher

to conclude that Congress used sound judgment in the last three MYP requests that were rejected.

The analysis of the factors leading to Congressional approval or rejection of MYP candidates has yielded varied results. Some decisions seemed to be made in accordance with the legislated criteria and some were not. The analysis that used GAO assessments led the researcher to one of the three following conclusions: (1) the GAO audits were not accurate; (2) the numeric method of this analysis was not able to take into effect how strong or weak GAO's questions were on specific criteria; or (3) there are other factors more important to Congress in the MYP approval decision than the legislated criteria.

C. RECOMMENDATIONS

1. The DOD should be empowered to apply more discretion over when to utilize MYP by increasing and indexing thresholds.

The process for MYP candidate review is basically a good one. The system is working based on the recent Congressional MYP approval rates. The problem is that Congress' omission to index key thresholds to keep pace with inflation has led to increased Congressional oversight into smaller programs than when the legislation was originally enacted. There are three numeric dollar values that are critical in the Congressional/DOD MYP relationship: (1) the \$100 million cancellation ceiling notification requirement, (2) the \$20 million economic order quantity (EOQ) notification requirement and (3) the \$500 million contract value approval requirement. These values were initially instituted in 1982, 1983 and 1986. Chapter IV, Section D contains details of this analysis. These values should first be raised significantly, consistent with the acquisition reform trends of raising thresholds. This will empower the DOD to make decisions without the burden of reporting to Congress. Congress will still maintain the same process for

the higher dollar MYPs, which is an efficient use of their efforts and satisfies their constitutional oversight requirements. Once these thresholds have been raised, they should be indexed annually based upon the consumer price index to maintain the constant level of intent for Congressional control over the DOD MYP process.

2. Congress should be required to state reasons in writing why specific MYPs are not approved.

Congress does not currently state why programs are rejected for MYP. Signals are often sent by Congress but often these signals are not consistent. Mixed signals can send a program office in the wrong direction, which is very inefficient. Congress should be required to state in writing why a program was rejected. This will allow program offices to know exactly where they stand and give them more information that will help in determining if they should pursue MYP in the next approval cycle.

D. ANSWERS TO RESEARCH QUESTIONS

This section begins by answering the subsidiary questions that were proposed in Chapter One. The supporting analysis for the answers comes from the analysis within Chapter IV, and the conclusions of Chapter V, Section A. This section will culminate in the answering of the primary research question that was also proposed in Chapter I. The following are the subsidiary questions and answers:

1. What are the current policies and regulations pertaining to MYP? The DOD can consider MYP when a program meets the following criteria: substantial savings, stable requirement, stable funding, stable design, realistic cost savings and promotion of national security. MYPs with values greater than \$500 million must be approved by both an Appropriation Act and an "other than Appropriation Act". The DOD must notify Congress 30

days prior to awarding a contract with a cancellation ceiling greater than \$100 million. The Office of the Secretary of Defense (OSD) must certify to Congress that a program is fully funded and minimum economic production rates will be achieved by the contract. MYPs with greater than \$20 million EOQ procurement, unfunded contingent liability or advance procurement leading to MYP requires Congressional notification at least 30 days prior to award. DOD may not terminate a MYP without notifying Congress at least ten days in advance of the proposed termination.

2. What has been DOD's experience with Congress' MYP approval process? The 1980s were a period characterized by DOD and Congress learning how to utilize the MYP process and testing whether the savings would materialize from MYPs. In 1990 Secretary of Defense Carlucci emphasized use of MYPs. This was a very turbulent fiscal time with the fall of the Soviet Union and the public's demand for a peace dividend. The researcher believes Secretary Carlucci saw future Defense budgets shrinking and wanted to lock into and provide stability for as many DOD programs as possible. The 1990s were a period of reduced DOD spending and the quantity of MYPs dropped considerably compared to the 1980s. High approval rates in the 1990s indicates that Congress and DOD were thinking along similar lines when evaluating programs for MYP.

3. What are the primary Congressional considerations leading to MYP approval/rejection decisions? Analysis of the legislated criteria of 23 GAO MYP assessments comparing their Congressional approval/disapproval decision record, resulted in the determination that there was not a significant difference between the approved and disapproved candidates. In fact, the disapproved candidates scored slightly higher on GAO's assessments than the approved MYPs. This leads the researcher to believe that there are often considerations other than the legislated MYP criteria that are the primary Congressional consideration.

4. Has Congress adhered to its stated MYP approval/rejection criteria? Analysis of the 23 GAO assessments produced mixed results. Three programs were approved in which GAO rated four out of five criteria as not clearly meeting the legislated requirements. Two programs were not approved, yet had only the one criterion of savings not clearly meeting the legislated requirement. The GAO assessments provided reasonable to good support for the remaining 17 MYP request decisions. As stated in question three, the analysis of the GAO assessments determined that the disapproved candidates rated slightly higher than the approved candidates. Analysis of the last three MYP requests to be disapproved, which did not have GAO assessments, yielded the conclusion that Congress had made the correct decision. In summary, these statements indicate that Congressional adherence to the MYP criteria has varied from 1982 through 1998.

5. What is the DOD's experience with MYP program cancellations? There have been only three program cancellations since 1982, the MK-46 torpedo, the Hawk Missile and the Family of Medium Tactical Vehicles (FMTV). The total cancellation fees paid for these MYPs was \$13 million, which was all, paid by the Hawk Missile Program. The MK-46 and the FMTV both did not have cancellation fees associated with the contract cancellation. When comparing the \$13 million figure to the estimated TOA savings of MYPs, which were approved and awarded of \$ 11.54 billion from fiscal years 1982 through 1999, it is clear that the financial benefits far outweigh the potential cancellation fees associated with MYP.

6. What is the relationship between the rationale Congress has given for rejection of MYPs and their stated approval/rejection criteria? This is a question that can not be answered definitively. Congress does not state why they approve or reject a MYP request. However, they do send signals by the questions they may ask DOD, direction given to DOD or by hearings. These signals may provide a general idea, a specific idea or no idea at all of why a program was

approved or not. Interpretation of these signals is all DOD has to determine the reasoning for Congress' approval or rejection rationale. The most recent rejection was the T-45 aircraft in fiscal year 1999. Congress expressed concern over the low 5.2 percent savings rate. The T-45 program office received direction from the appropriation committees that if they were able to raise the savings rate to 5.5 percent, the request would receive MYP approval. The Navy and the contractor reached a plan that would achieve 5.5 percent and then the request was rejected. The exact reasoning for the rejection is unknown, but it probably had to do with the savings rate, which was low, compared to the historical norms.

7. Has Congress altered MYP policies as a result of recent acquisition reform initiatives? Congress changed the required savings rate criterion for MYP from twelve percent to ten percent to substantial savings from fiscal year 1989 to 1991. This is consistent with acquisition reform initiatives of the 1990s. The 1998 National Defense Authorization Act legislated that an Appropriation Act and an "other than Appropriation Act" must approve a MYP request. This action legislated what had been a Congressional rule and is in keeping with what had been normal operating procedure for most MYPs. Despite the logic of this legislation, it is adding additional administrative burden to the MYP approval process that is counter to the streamlining initiatives of the NPR, FASA and Clinger-Cohen. In summary, Congress has made only one significant change to the DOD MYP legislation from 1989 through 1998.

8. Is the amount of Congressional control over the DOD's MYP process appropriate?

Congress approved 57 of 81 requested programs, or 70 percent, from fiscal year 1982 through 1989. Congress approved 10 of 35, or 30 percent of MYPs proposed in fiscal year 1990 during the year of the Carlucci MYP initiative. During the period of fiscal years 1991 through 1999, Congress approved 32 of 35 MYPs or 91 percent of MYPs proposed. Considering the facts that since 1991, 91 percent of MYPs have been approved, including 23 of the last 24 through fiscal

year 1999, it leads the researcher to believe that the amount of control Congress holds over the DOD is excessively tight and in need of loosening. These high approval rates demonstrate that DOD's screening process for MYPs yields similar decisions as Congress'. These similar results mean that redundancy exists which should be streamlined to reduce Congressional control over the DOD such as empowerment would be consistent with current acquisition reform initiatives.

9. How might MYP policy be changed to improve the acquisition process? The researcher recommends the following changes: (1) Index all legislated threshold dollar values; (2) Reduce the timing rigidity for the MYP Congressional approval process; (3) Require Congress to state reasons in writing why specific MYPs are not approved. Details for these recommendations are provided in Section B above.

The subsidiary questions above are all fundamental elements and provide the details that answer the primary research question as follows: What role does Congress play with respect to Department of Defense multiyear procurement policy and has multiyear procurement approval criteria changed as a result of recent acquisition reform initiatives? The fact is that Congress has very tight control over the MYP process for major acquisitions. Congress must give the DOD approval to enter MYP and then annually fund the programs to allow them to continue. DOD must even notify Congress before they cancel a MYP with a large cancellation ceiling. MYP approval criteria have changed in the area of required savings to allow DOD additional discretion in the decision of whether use of MYP is appropriate. Several additional areas of MYP legislation are ripe for reform. The DOD has learned how to interpret Congress' legislated MYP criteria and has enjoyed a very high Congressional approval rate in the 1990s. This success rate has set the stage for additional acquisition reforms in the area of MYP.

E. AREAS OF FURTHER RESEARCH

This thesis dealt with the relationship between Congress and the DOD with respect to MYP in an acquisition reform environment. Additional areas of research relating to MYP that were outside the scope of this thesis include:

1. It is commonly believed that once a program enters into MYP, any modification will be a costly endeavor for the Government. Investigate what flexibility exists once the Government has entered into a MYP. What contracting mechanisms can be utilized to facilitate flexibility for multiyear contracts and minimize excessive modification costs?
2. Investigate the legality and potential benefit of utilizing integrated product teams (IPTs) with both the DOD and Congressional personnel. What are the risks associated with this concept? Would these IPTs foster improved relations and increased efficiency of the DOD and Congressional relations? Identify areas of the DOD and Congressional interactions where institution of IPTs may be useful. Identify who from Congress and their staffs should sit in these IPTs.
3. What factors exist outside of the legislated criteria that are influential on the MYP approval/disapproval decision? How important are these factors? What is their importance relative to the legislated criteria? Should their influence be mitigated and how can this be accomplished?
4. What are the effects of MYP on competition? Does the benefit of a long-term contract induce additional contractors to vie for a MYP? Do contractors who lose the contract go out of business or look to other markets when they lose? Do these firms maintain their required competencies? Are these contractors bidding the next time the contract is solicited?

APPENDIX A: ACRONYMS

| | |
|--------|--|
| CBO | Congressional Budget Office |
| COTS | Commercial Off-the-Shelf |
| DAB | Defense Acquisition Board |
| DOD | Department of Defense |
| DRPB | Defense Resource Planning Board |
| EOQ | Economic Order Quantity |
| FACNET | Federal Acquisition Computer Network |
| FARA | Federal Acquisition Reform Act |
| FASA | Federal Acquisition Streamlining Act |
| FYDP | Future Years Defense Plan |
| GAO | General Accounting Office |
| IT | Information Technology |
| ITMRA | Information Technology Management Reform Act |
| MDA | McDonnell Douglas Aircraft |
| MYP | Multiyear Procurement |
| NDI | Non-Developmental Item |
| NPR | National Performance Review |
| OMB | Office of Management and Budget |
| OSD | Office of the Secretary of Defense |
| OUSD | Office of the Under Secretary of Defense |
| PDM | Procurement Decision Memorandum |
| PEO | Program Executive Officer |
| POM | Program Objective Memorandum |
| PPBS | Planning, Programming and Budgeting System |
| SASC | Senate Armed Service Committee |
| SECDEF | Secretary of Defense |
| TOA | Total Obligation Authority |
| USC | United States Code |

APPENDIX B: EXHIBIT MYP-1, MULTIYEAR PROCUREMENT CRITERIA

Date: #####

Program T-45TS

1. Multiyear Procurement Description:

The proposed airframe multiyear procurement covers the period from FY99 through program payout in FY03. The procurement quantities follow are: FY99=15 A/C, FY00=15 A/C, FY01=15 A/C, FY02 = 15 A/C & FY03=4 A/C. This multiyear procurement is structured with separately identified Economic Order Quantity (EOQ) advance procurement funding. EOQ requirements and resultant contract savings are detailed below. Termination liability (TL) is wholly contained in the annual funding amounts of the MYP. There are no additional nonrecurring costs as the contractor requires no new significant tooling to produce the aircraft. Advance procurement for the airframe is required for termination liability in FY98 for FY99, and advance procurement for EOQ is required for FY99 = \$62.8M, FY00= \$57.2M, FY01=\$14.9M and FY02=\$3.0M. Contract type will continue to be firm-fixed price, with salient features being an economic price adjustment, , acts of God clause, business base fluctuations, material escalation, and foreign exchange rate protection.

This MYP is fully funded on an annual basis across the five years from FY99 to FY03. In the event of cancellation, the government would negotiate a settlement, and it is anticipated funds included in the budget would cover all costs.

2. Benefit to the Government.

a. Savings and Cost Avoidance:

The proposed multiyear savings come from the following areas (based on Boeing (MDA) input), and have been reviewed by the Naval Center for Cost Analysis (NCCA). NCCA found the estimating methodologies utilized by Boeing as reasonable, and consistent with other aircraft multiyear savings as reflected in the OSD Cost Analysis Improvement (CAG) data base. All savings are derived from a savings on recurring costs only as a result of either procuring or building the aircraft in Economic Order Quantities (EOQ).

Boeing in-house

Overall, this type of savings results from the increased efficiency of a stable labor force

- Integrated Product Development

1.0%

6.5% Reduction in Engineering (primarily design) staff in order to sustain the production line. As production quantities will be known for 4.3 years, hours on certain taskings, such as preparing drawings, will be reduced.

14% Reduction in labor hours for the Tool Design/Manufacturing processes. This % is based on previous AV-8B FY89-91 MYP experience. Fewer hours would be required of Mfg. Engineers/Mfg. planners under a MYP as manufacturing changes would be issued fewer times as building components and assemblies would be for EOQ vice annual quantities . Stable (under contract) EOQ quantities and configuration are required.

- Manufacturing

0.7%

1.0% Reduction in Setups. Set-up is a small % of Mfg. costs, and Boeing anticipates a 40% reduction in set-ups. This will equate to a 1% savings in touch labor.

14% Reduction in Sustaining Tool/Plan as a result of fewer setups/stability in production. This 14% is also based on AV-8B MYP experience and the statement in IPD above applies.

- Supplier Management & Procurement

0.3%

5.0% Staff reduction due to a requirement to place & monitor fewer orders as a result of EOQ Savings result from negotiating sub-contractor / vendor contracts once instead of five times.

Procurement

Overall, these savings are attributable to "bulk" purchases of items to cover 4.3 years of manufacturing the T-45 aircraft. Includes fewer manufacturing runs for machined parts, thereby eliminating parts obsolescence Basically, it involves ordering in Economic Order Quantity (EOQ) lots.

MYP Savings

Overall, this type of savings results from the increased efficiency of a stable labor force

1.0%

6.5% Reduction in Engineering (primarily design) staff in order

to sustain the production line. As production quantities will be

known for 4.3 years, hours on certain taskings, such as preparing

drawings, will be reduced.

14% Reduction in labor hours for the Tool Design/Manufacturing processes.

This % is based on previous AV-8B FY89-91 MYP experience. Fewer hours would be required of Mfg. Engineers/Mfg. planners under a MYP as manufacturing changes would be issued fewer times as building components and assemblies would be for EOQ vice annual quantities . Stable (under contract) EOQ quantities and configuration are required.

0.7%

1.0% Reduction in Setups. Set-up is a small % of Mfg. costs,

and Boeing anticipates a 40% reduction in set-ups. This will

equate to a 1% savings in touch labor.

14% Reduction in Sustaining Tool/Plan as a result of fewer setups/stability in production. This 14% is also based on AV-8B MYP experience and the statement in IPD above applies.

0.3%

5.0% Staff reduction due to a requirement to place & monitor fewer orders as a result of EOQ Savings result from negotiating sub-contractor / vendor contracts once instead of five times.

- 8.0% Reduction in Material, including forgings, castings, raw material as a result of procuring EOQ quantities from vendors 0.4%
- 4.8% Reduction in CFE/Subcontract. This % was obtained by quotes from the 4 largest vendors, and applying savings across all vendors. Major components for EOQ funding include Landing Gear, Avionics, Lights, Switches, and Indicators 0.4%

- 5.4% Reduction from British Aerospace (BAE) based on quote from BAE. EOQ items include Center and Aft Fuselage, Wings, Tail Cone and Rudder. 2.4%
5.2%

Cost avoidance is not dependent on a MYP. The annual procurement quantity has been accelerated from the FY98 President's Budget submittal and does produce significant cost avoidance because the program no longer buys low annual quantities of 6 or 7 airplanes in FY04 and FY05.

- b. Impact on Industrial Base:
None.

- c. Aircraft Deliveries:

The MYP delivers the last T-45C aircraft two years earlier than under the previous budget submit, providing cost avoidance savings of \$363M from potential FY04/05 budget submissions.

3. Stability of Requirement.

The requirement for the procurement of T-45's is stable. In addition, the problems associated with the aging and increasingly unreliable T-2's lead to increased stability for the T-45 program. The Navy needs the T-45 aircraft in order to maintain a viable program for training naval aviators. The Navy will purchase these aircraft whether they are part of a multiyear or a regular annualized procurement, and since there is a stable requirement it only makes sense to realize MYP savings for the American taxpayer. The Navy is considering procuring additional aircraft for attrition purposes in order to fly the T-45 through FY2035, thus demonstrating further requirement stability.

4. Stability of Funding.

Funding for the T-45TS program has been stable since 1992. The Navy and DoD are firmly committed to providing continued funds for the T-45.

- 5. Stable Configuration.**
The T-45 plane is a mature plane that is currently over halfway through its procurement life. The new Cockpit-21 configuration has been extensively tested. This modification was determined by the Navy's Operational Test and Evaluation Force to be both effective and suitable for the training mission. The configuration is considered stable by Naval leadership and the customer (CNATRA) is extremely pleased with the T-45 performance.

6. Degree of Cost Confidence.

The following exhibits have been put together using AIR 4.2.2's budget model, which is regularly updated with actual cost data and forward price agreement data. Additionally, multiyear procurement savings of 5.2% (annual off of the Airframe) were developed utilizing contractor Boeing(MDA) input. The assumptions, methodology, and savings utilized by Boeing were independently reviewed by the NCCA, and were deemed to be reasonable by NCCA.

7. Degree of Confidence in Contractor Capability.

The Government is confident that Boeing (MDA) will be able to support and deliver the proposed aircraft procurement schedule. This statement is made based on discussions with Boeing's management after reviewing Boeing's past performance. Management is committed to ensuring this aircraft meets the delivery schedule, as Boeing is on schedule to overcome previously identified delivery problems by June 1998. Plant capacity is not an issue.

8. Risk Factors.

| Category | Risk | Explanation |
|-------------------------|------|--|
| Requirement Stability | Low | Based on comments above |
| Funding Stability | Low | Based on comments above |
| Configuration Stability | Low | Based on comments above |
| Cost Confidence | Low | Based on comments above, and NCCA review |

9. Multiyear Summary.

| | ANNUAL CONTRACTS | MYP ALTERNATE |
|-------------------------------|------------------|---------------|
| Quantity | 64 | 64 |
| Total Contract Price | 911.0 | 863.6 |
| \$ Cost Avoidance Over Annual | 474 | |
| % Cost Avoidance Over Annual | 5.2% | |

APPENDIX C: MYP-1, TOTAL PROGRAM FUNDING PLAN

| Exhibit MYP-2, Total Program Funding Plan | | Date | | P-1 Line Item Nomenclature | | | | | | | | | |
|--|--|---------|---------|----------------------------|---------|---------|---------|---------|---------|---------|---------|---------|--------|
| Appropriation/Budget Activity | | | | T-45TS MYP | | | | | | | | | |
| Aircraft Procurement, Navy/APN-3, Trainer Aircraft | | FY 1998 | FY 1999 | FY 2000 | FY 2001 | FY 2002 | FY 2003 | FY 2004 | FY 2005 | FY 2006 | FY 2007 | FY 2008 | Total |
| Annual Procurement | | | | | | | | | | | | | |
| Proc Qty | | 15 | 15 | 15 | 15 | 15 | 4 | 0 | 0 | 0 | 0 | 0 | 64 |
| Gross Cost | | 299.7 | 316.3 | 298.6 | 292.4 | 111.8 | | | | | | | 1318.7 |
| Less Adv Proc | | 6.1 | 8.0 | 8.2 | 8.3 | 2.8 | | | | | | | 33.4 |
| Net Proc (=P-1) | | 293.6 | 308.3 | 290.4 | 284.0 | 109.0 | | | | | | | 1285.3 |
| Plus Adv Proc | | 6.1 | 8.0 | 8.2 | 8.3 | 2.8 | 0.0 | | | | | | 33.4 |
| Weapon System | | 6.1 | 301.6 | 316.4 | 298.7 | 286.8 | 109.0 | | | | | | 1312.6 |
| Multyear Proc | | | | | | | | | | | | | |
| Proc Qty | | 15 | 15 | 15 | 15 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 64 |
| Gross Cost (P-1) | | 288.8 | 305.2 | 287.5 | 281.5 | 108.3 | | | | | | | 1271.3 |
| Less Adv Proc | | 6.1 | 40.4 | 56.7 | 43.0 | 8.1 | | | | | | | 154.3 |
| Net Proc | | 282.7 | 264.8 | 230.8 | 238.5 | 100.2 | | | | | | | 1117.0 |
| AP for FY99 | | 6.1 | | | | | | | | | | | 6.1 |
| AP for FY00 | | | 40.4 | | | | | | | | | | 40.4 |
| AP for FY01 | | | 12.5 | 44.2 | | | | | | | | | 56.7 |
| AP for FY02 | | | 7.3 | 21.6 | 14.1 | | | | | | | | 43.0 |
| AP for FY03 | | | 0.0 | 0.0 | 4.0 | 0.0 | | | | | | | 8.1 |
| Total AP | | 6.1 | 60.2 | 65.8 | 18.1 | 4.0 | 0.0 | | | | | | 154.3 |
| Weapon System | | 6.1 | 342.8 | 330.7 | 249.0 | 242.5 | 100.2 | | | | | | 1271.3 |
| Multyear Savings (\$) | | 0.0 | -41.2 | -14.2 | 49.8 | 44.3 | 8.8 | | | | | | 47.4 |
| Multyear Savings (%) | | | | | | | | | | | | | |
| OUTLAYS | | | | | | | | | | | | | |
| Annual | | 1.1 | 56.0 | 144.5 | 240.3 | 275.1 | 248.6 | 188.2 | 99.2 | 40.9 | 19.2 | 5.6 | 1318.7 |
| Multyear | | 2.1 | 21.1 | 247.0 | 338.3 | 238.3 | 211.1 | 143.4 | 48.6 | 13.2 | 6.0 | 2.2 | 1271.3 |
| Savings | | -1.0 | 34.9 | -102.5 | -98.0 | 36.8 | 37.5 | 44.8 | 50.6 | 27.7 | 13.2 | 3.4 | 47.4 |
| Remarks | | | | | | | | | | | | | |

APPENDIX D, EXHIBIT MYP-3, CONTRACT FUNDING PLAN

| Exhibit MYP-3, Contract Funding Plan | | Date | January-98 | | | | | | | | | |
|--|---------|----------------------------|------------|---------|---------|---------|---------|---------|---------|---------|---------|-------|
| Appropriation/Budget Activity | | P-1 Line Item Nomenclature | | | | | | | | | | |
| | | T-45TS MYP | | | | | | | | | | |
| Aircraft Procurement, Navy/APN-3, Trainer Aircraft | FY 1998 | FY 1999 | FY 2000 | FY 2001 | FY 2002 | FY 2003 | FY 2004 | FY 2005 | FY 2006 | FY 2007 | FY 2008 | Total |
| Annual Procurement | | | | | | | | | | | | |
| Proc Qty | 15 | 15 | 15 | 15 | 4 | 0 | 0 | 0 | 0 | 0 | 64 | |
| Gross Cost | 210.1 | 211.9 | 212.6 | 209.3 | 67.1 | | | | | | 911.0 | |
| Less Adv Proc | 3.1 | 5.0 | 5.2 | 5.1 | 1.7 | | | | | | 20.2 | |
| Net Proc (=P-1) | 207.0 | 206.9 | 207.4 | 204.1 | 65.4 | | | | | | 890.8 | |
| Plus Adv Proc | 3.1 | 5.0 | 5.2 | 5.1 | 1.7 | 0.0 | | | | | 20.2 | |
| Contract Price | 3.1 | 212.0 | 212.1 | 212.5 | 205.9 | 65.4 | | | | | 911.0 | |
| Multiyear Proc | | | | | | | | | | | | |
| Proc Qty | 15 | 15 | 15 | 15 | 4 | 0 | 0 | 0 | 0 | 0 | 64 | |
| Gross Cost (P-1) | 199.2 | 200.9 | 201.5 | 198.4 | 63.6 | | | | | | 863.6 | |
| Less Adv Proc | 3.1 | 37.4 | 53.7 | 39.8 | 7.0 | | | | | | 141.0 | |
| Net Proc | 196.1 | 163.5 | 147.8 | 158.6 | 56.6 | | | | | | 722.6 | |
| AP for FY99 | 3.1 | | | | | | | | | | 3.1 | |
| AP for FY00 | | 37.4 | | | | | | | | | 37.4 | |
| AP for FY01 | | 12.5 | 41.2 | | | | | | | | 53.7 | |
| AP for FY02 | | 7.3 | 21.6 | 10.9 | | | | | | | 39.8 | |
| AP for FY03 | | 0.0 | 0.0 | 4.0 | 3.0 | 0.0 | | | | | 7.0 | |
| Total AP | 3.1 | 57.2 | 62.8 | 14.9 | 3.0 | 0.0 | | | | | 141.0 | |
| Contract Price | 3.1 | 253.2 | 226.3 | 162.8 | 161.6 | 56.6 | | | | | | |
| Multiyear Savings (\$) | 0.0 | -41.2 | -14.2 | 49.8 | 44.3 | 8.8 | | | | | | |
| Multiyear Savings (%) | | | | | | | | | | | | |
| OUTLAYS | | | | | | | | | | | | |
| Annual | 0.6 | 39.0 | 99.4 | 166.3 | 191.5 | 173.4 | 130.3 | 66.3 | 27.7 | 13.2 | 3.2 | |
| Multiyear | 1.5 | 4.1 | 201.8 | 264.3 | 154.7 | 135.9 | 85.6 | 15.6 | 0.0 | 0.0 | 0.0 | |
| Savings | -0.9 | 34.9 | -102.4 | -98.0 | 36.8 | 37.5 | 44.7 | 50.7 | 27.7 | 13.2 | 3.2 | |

APPENDIX E, EXHIBIT MYP-4, PRESENT VALUE ANALYSIS

| Exhibit MYP-4, Present Value Analysis | | Date | January-98 | | | | |
|--|---|----------------------------|------------|---------|---------|---------|---------|
| Appropriation/Budget Activity | | P-1 Line Item Nomenclature | | | | | |
| Aircraft Procurement, Navy/APN-3, Trainer Aircraft | | T-45TS MYP | | | | | |
| Annual Proposal | FY 1998 | FY 1999 | FY 2000 | FY 2001 | FY 2002 | FY 2003 | FY 2004 |
| Then Year Cost | 0.6 | 39.0 | 99.4 | 166.3 | 191.5 | 173.4 | 130.3 |
| Constant Year Cost | 0.6 | 38.4 | 97.1 | 161.3 | 183.3 | 164.0 | 122.4 |
| Present Value | 0.6 | 37.2 | 90.9 | 146.1 | 160.6 | 139.0 | 100.5 |
| Multyear Proc | | | | | | | |
| Then Year Cost | 1.5 | 4.1 | 201.8 | 264.3 | 154.7 | 135.9 | 85.6 |
| Constant Year Cost | 1.5 | 4.0 | 198.5 | 256.4 | 147.2 | 126.9 | 78.9 |
| Present Value | 1.5 | 3.9 | 185.9 | 232.3 | 129.0 | 107.6 | 64.8 |
| Difference | | | | | | | |
| Then Year Cost | -0.9 | 34.9 | -102.4 | -98.0 | 36.8 | 37.5 | 44.7 |
| Constant Year Cost | -0.9 | 34.4 | -101.4 | -95.1 | 36.1 | 37.1 | 43.5 |
| Present Value | -0.9 | 33.3 | -95.0 | -86.2 | 31.6 | 31.4 | 35.7 |
| Multyear Savings (\$) | -0.9 | 34.9 | -102.4 | -98.0 | 36.8 | 37.5 | 44.7 |
| Multyear Savings (%) | | | | | | | |
| Remarks | Does not include plant shut down costs. | | | | | | |

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